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The Ever Varied Blood Supply of the Liver and Its Collateral Circulation

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THIS contribution is based on a dissection and statistical analysis of 200 cadavers in the anatomic dissecting rooms. In each instance I personally dissected the arteries supplying the upper abdominal organs and made sketches of them prior to manipulation of them by students. The final details of terminal ramifications of the regional arteries, especially of the hepatic and cystic arteries, were worked out in excised specimens, these comprising in all instances, *en bloc,* all of the supramesocolonic organs. To avoid preconceived categorization the difficult, at times baffling, statistical estimates were made only after all sketches had been completed. Of the 200 bodies statistically analyzed, 181 were male and 19 female. The ages varied from 25 to 90 years, the majority being over 50 years.

Terminology.—In reading previous investigations of the hepatic blood supply, one is impressed with the looseness and nonuniformity of meaning with which the term "accessory hepatic artery" has been used. Most authors have failed to state whether the accessory is really an accessory or whether it is a replaced hepatic artery, i. e., one taking the place of the normal hepatic and arising from a source *other than the celiac. Percentages as re-*

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gards accessory hepatics have little significance and meaning unless it is definitely stated what kind of hepatic artery is meant by the term "accessory." To clarify this situation, the following nomenclature of the hepatic artery is used:

A typical "normal" hepatic artery arises from the celiac artery and divides into three main branches, right hepatic, left hepatic and middle hepatic, the last-mentioned supplying the quadrate lobe. The middle hepatic is usually a branch of the right or left hepatic and arises in about equal proportion (45 per cent) from either stem. Despite its early description by Haller in 1756 it is not described in texts of anatomy or surgery, domestic or foreign. In view of its constancy and the fact that in some instances it gives rise to a cystic artery, *the middle hepatic should be included in all texts.*

When a hepatic artery arises from a source other than the terminal end of the celiac trunk, it is considered an aberrant hepatic, of which there are two types, replaced and accessory. A replaced hepatic is a substitute for the normal celiac hepatic which is lacking; an accessory hepatic is additive to the celiac hepatic normally present.

The term supraduodenal designates the artery of Wilkie that supplies the upper border and the anterior and posterior surfaces of the first inch of the duodenum, the area corresponding roughly to the anemic spot of Mayo. In some instances it arises from the right hepatic or cystic. The term "retroduodenal" denotes the artery that forms a scalloped arcade on the back of the head of the pancreas, with branches to the entire posterior surface of the duodenum. It is synonymous with the cumbersome and confusing term—the posterior superior pancreaticoduodenal—which was applied to this textually unlisted artery by Belou and by Petrén, and was subsequently used by Pierson and by Woodburne and Olsen to distinguish it from the superior pancreaticoduodenal, anterior in position and well known to surgeons. As will be shown later, and has been substantiated by Appleby of Canada, the retroduodenal is one of the main arteries supplying the common duct.

The dorsal pancreatic is a textually unlisted artery that supplies the back of the pancreas in the cervical region. It can readily be found behind the juncture point of the superior mesenteric vein and the splenic vein. The transverse pancreatic is an unlisted artery that courses along the inferior surface of the pancreas, at the tail end of which it anastomoses with a branch of the splenic. The dorsal pancreatic and transverse pancreatic are important routes of collateral circulation to the liver, as will be shown later.

The Celiac Artery.—The conventional textbook description of the arterial blood supply of the liver, effected through a celiac trunk having three branches (hepatic, left gastric and splenic) *occurs only in about one-half of the population (55 per cent of 200 bodies), while that of the gallbladder (by a single cystic from a celiacal right hepatic in the cystic triangle of Calot) occurs only in 63 per cent.* The main causes of this amazing deviation from the so-called "normal" are the varied anatomic disposition of the celiac artery and the varied sites of origin of the right and left hepatics, be these accessory or replaced. When typical and complete the celiac artery has three branches, the left gastric, the splenic (lienal) and the hepatic artery constituting a complete hepatolienogastric trunk (65 per cent of 200 bodies). This trunk may be incomplete when the right, middle or left hepatic artery arises from some other source, thereby constituting an incomplete hepatolienogastric trunk. Hence, in complete or incomplete form, a hepatolienogastric trunk occurs approximately in 90 per cent, patic trunks) are replaced, i.e., *the only right hepatic present.* The inexcusable ligation of such an artery during cholecystectomy deprives the right lobe of its blood supply and may readily be the direct cause of grave morbidity and death, as was forcefully emphasized by the British surgeon Gordon-Taylor. Severance of a common hepatic artery of superior mesenteric origin (5 cases) during pancreaticoduodenal resection, of a common hepatic of superior mesenteric origin (5 cases) during pancreaticoduodenal resections or of a common hepatic trunk arising directly from the left gastric artery (1 case), would result in immediate death of the patient.

Despite the complexity and varied character of the hepatic arterial blood supply, any sample of it may, with minor modifications, be categorized into one of the following ten basic types:

The celiac hepatic artery supplies:

1. The right, left, and middle hepatic (textbook type and present only in about half (55 per cent) of the subjects (Fig. 2*A*).
2. The right and middle hepatic—the left hepatic replaced from the left gastric; 10 per cent (Fig. 2*B*).
3. The left hepatic and middle hepatic—the right hepatic replaced from the superior mesenteric; 11 per cent (Fig. 2*C*).
4. Only the middle hepatic—the right hepatic replaced from the superior mesenteric, the left hepatic replaced from the left gastric; 1 per cent.
5. The right, middle and left hepatic—left hepatic small, hence an accessory left hepatic from the left gastric; 8 per cent (Fig. 2*D*).
6. The right, middle and left hepatic—right hepatic small, hence an accessory right hepatic from the superior mesenteric, etc.; 7 per cent (Fig. 3*A*).

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made by the right (*13*) and left (*47*) gastroepiploic arteries are shown. About the head of the pancreas are an anterior and a posterior pancreaticoduodenal arcade made respectively by the superior pancreaticoduodenal (*18*) and the *retroduodenal* (posterior superior pancreaticoduodenal) artery (*16*). Both arcades join the superior mesenteric artery (*65*) via a common inferior pancreaticoduodenal (*63*). The artery of Wilkie (*15*) to the first part of the duodenum has had a section of it removed. The splenic artery (*38*) is characteristically tortuous and distally gives off a superior polar artery (*40*) to the spleen before dividing into its superior and inferior terminal branches.

Near the juncture point of the splenic vein (*39*) with the superior mesenteric vein (*65*) is the *dorsal pancreatic artery* (*33*). After supplying the neck region of the pancreas it gives off the *transverse pancreatic artery* (*35*) which courses along the inferior surface of the pancreas, at the tail end of which it anastomoses with the a. pancreatic magna (*41*) of the splenic and with the a. caudae pancreatis (*46*) from the left gastroepiploic (*47*). To the right it anastomoses with the superior mesenteric (*65*).

The anterior and posterior walls (*52*) of the inferior recess (*55*) of the omental bursa in the great omentum are shown. Situated in the posterior wall of the great omentum below the transverse colon (*51*) is the large *epiploic arc of Barkow* (*58*), the left limb of which is made by the left epiploic (*54*) from the left gastroepiploic (*47*). The right limb is not shown but is made by the right epiploic from the right gastroepiploic (*13*). Descending branches or anterior epiploic arteries (*72*) from the infragastric arterial circle end in the arc, as do some of the descending branches or posterior epiploic arteries (*73*) given off by the transverse pancreatic (*35*) coursing in the pancreas. The arc gives an additive blood supply to the transverse colon (*51*).

The *retroduodenal artery* (*16*) after its origin from the gastroduodenal (*14*) swerves around the common bile duct (*17*), supplying it and the ampulla of Vater in its course. The retroduodenal arcade with its branches to the back of the duodenum (*26*), here turned forward, is faintly visible behind the head of the pancreas.

A portion of the body of the pancreas (*36*), as well as a portion of its head (*71*) have been cut away. At the latter site is shown the union of the pancreatic duct (*19*) with the common bile duct (*17*). The major part of the stomach has been removed to show the retrogastric space of the omental bursa (*34*), bounded dorsally by the pancreas. The foramen of Winslow (*23*) leads into the vestibule of the omental bursa (*24*), where is visible the caudate lobe of the liver (*25*). Relations of the portal vein (*12*) to the hepatic arteries and bile ducts are shown, including the tributaries arising in the umbilical fossa (*1*).

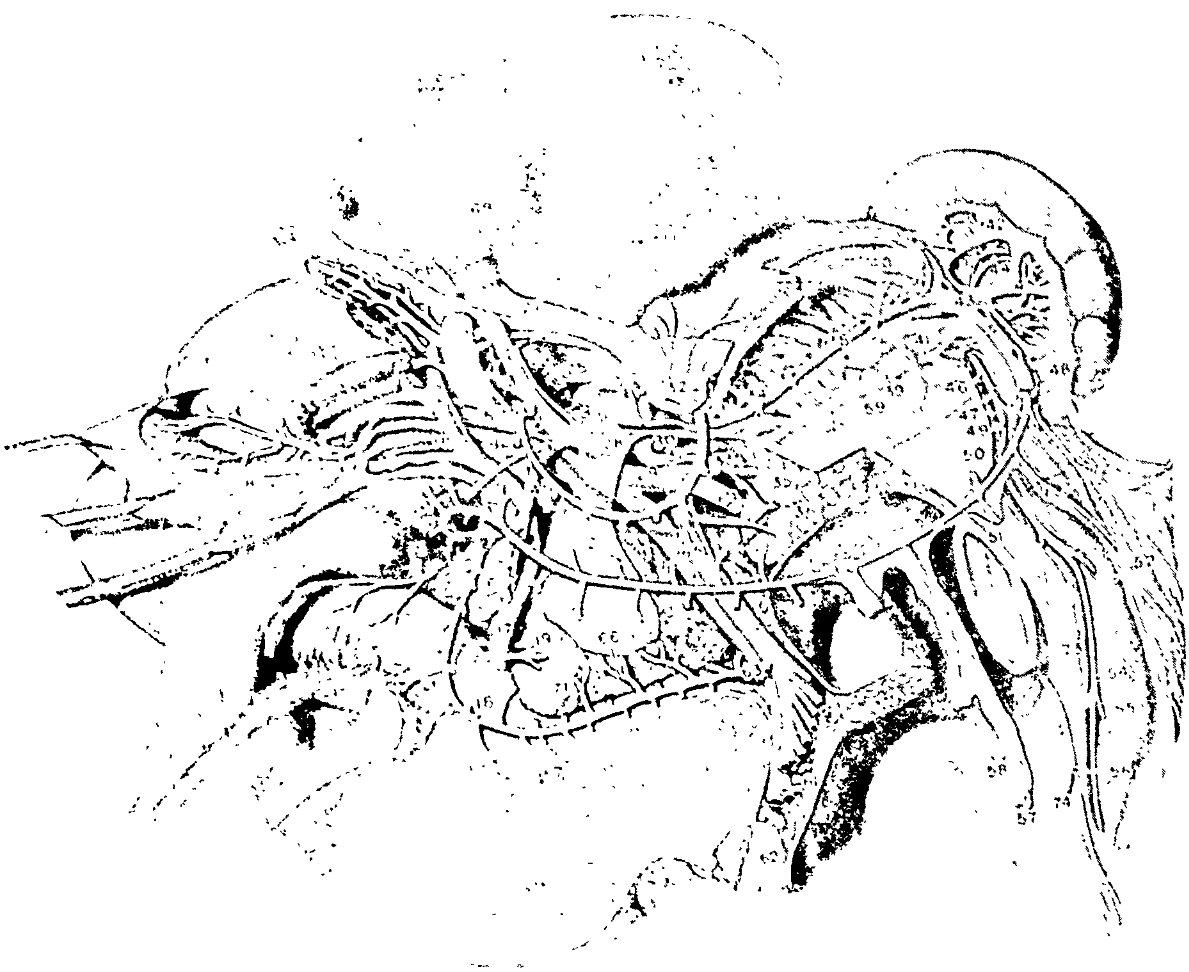

Fig. 1.—Typical blood supply of the upper abdominal organs. In this illustration, the various depths at which the structures and recesses actually lie and in which the arteries course are shown in proper perspective. Drawing was made by W. B. McNett, a pupil of Brödel, using the author's pencil sketch as a guide.

The celiac arterial pattern presented, i.e., that of a celiac artery giving rise to the common hepatic, splenic and left gastric arteries, *occurs only in about one-half of the population* (*55 per cent*); in the other half markedly different variations exist. Typically, the common hepatic artery divides into a right (*5*), left (*2*) and middle hepatic (*3*), the latter supplying the quadrate lobe or the medial segment of the left lobe (*6*). The single cystic artery (*9*) arises in Calot's triangle and divides into its superficial branch (*8*) and the deep branch (*7*).

The cystic triangle of Calot (*11*) is formed by the angular union of the cystic duct (*10*) with the hepatic duct (*4*). The latter receives three ducts which, according to the plastic casts of Healey and Schroy, most probably represent a right duct for the anterior and posterior segment of the right lobe, a medial segment duct for the medial segment and a lateral segment duct for the lateral segment of the left lobe.

The right hepatic artery (*5*) divides into its anterior and posterior segmental branch for the respective segments of the right lobe. The left hepatic (*2*) divides into its superior and inferior area branch of the lateral segment of the left lobe. The middle hepatic (*3*) supplies the medial segment of the left lobe. These statements are in accord with observations on the 150 vinyl plastic casts of human livers made by Healey and Schroy (the latter a graduate student under the supervision of the author) at the Daniel Baugh Institute of Anatomy.

The supragastric circle made by the right (*20*) and left (*32*) gastric and the infragastric circle

Fig. 3.—*A*, type with an accessory right hepatic (*AcRH*) as the hepatic divides into left, middle, and right branches. Since the celiacal right hepatic gives off only the cystic (*C*) and a very small liver branch, an accessory right hepatic (*AcRH*) from the superior mesenteric supplies the right lobe; before doing so, it anastomoses with the right hepatic. The *retroduodenal* (*RD*) is a branch of the hepatic and not of the gastroduodenal, *thereby justifying its own terminology.* It descends anterior to the common bile (*CBD*), forms an extensive arcade on the posterior surface of the duodenum and head of the pancreas, then unites with the accessory right hepatic via its own inferior pancreaticoduodenal (*IPD*). The cystic duct (*CD*) joins the common hepatic duct anteriorly and to the left; it is dangerously close to the accessory right hepatic (*AcRH*). The latter gives off the supraduodenal (*SD*), which anastomoses with the retroduodenal. Single cystic artery with typical distribution of its superficial and deep branch. *B*, type in which the liver has five major arteries, three from the celiacal hepatic and two accessory hepatic arteries (accessory right hepatic (*AcRH*) from the superior mesenteric (*SM*), the accessory left hepatic (*AcLH*) from the left gastric (*LG*). The deep cystic (*DC*), after giving off a liver branch and supplying the attached surface of the gallbladder, ramifies in areas beyond it as a relatively large liver artery. The cystic duct (*CD*) is long (6 cm.) and serves posterior to the hepatic duct with which it is intimately united with connective tissue for 7.5 cm. before opening into the common bile duct (*CBD*). Note how the accessory right hepatic (*AcRH*), most likely the posterior segmental branch of the right lobe, enters the fissured area under the gallbladder and how readily it may be mistaken for the cystic. *C*, type without a celiacal hepatic. The entire blood supply of the liver comes from the superior mesenteric (*SM*) via a replaced common hepatic, the right branch of which courses upward dorsal to the portal vein (*PV*). Note close relation of the cystic artery (*C*) to the large liver artery (most probably the posterior segmental branch of the right hepatic [*RIL*]), as latter enters the fissured area under the gallbladder. Such a common hepatic may pass through the head of the pancreas, where it inadvertently may be severed. The retroduodenal arcade here is double; the upper unites with the gastroduodenal, the lower with the superior mesenteric via its own inferior pancreaticoduodenal (*IPD*). *D*, hepatic trunk from left gastric; surgically considered, very dangerous in partial or total gastrectomy. Here the entire blood supply of the liver and gallbladder comes from the left side, i.e., from the left gastric via a replaced hepatic trunk which ran at the periphery of the lesser omentum and on opening the abdomen was largely hidden from view. The cystic arises from the middle hepatic (*MH*) and after crossing the hepatic duct divides into its superficial (*SC*) and deep branch (*DC*). Surgically considered, it is important to know that the middle colic (*M. Col.*) may arise from the celiac, and give origin to the dorsal pancreatic, as here. Branches of the left inferior phrenic artery supply the esophagus.

here, except in summary. Of great import in the search for the cystic artery is the fact that in nearly 20 per cent of the 200 cases no cystic artery had its origin in Calot's triangle, while in 80 per cent there was always the origin of a cystic in the triangle, either the single cystic, the superficial branch, the deep branch or both branches. Cystic arteries arising from a typical celiac right hepatic in the triangle comprised: single cystic, 43 per cent; double cystic, 11.5 per cent, and either the superficial or the deep branch, 8 per cent —a total of 63 per cent. Aberrant right hepatics gave rise to the cystic in the triangle in 18 per cent. The single cystic, its superficial or its deep branch arose from the right hepatic to the left of the hepatic duct in 19.5 per cent; from the left hepatic, middle hepatic or common hepatic in 6.5 per cent and *from the gastroduo-*

cially the deep cystic, from an aberrant replaced right hepatic artery from the superior mesenteric occurred more frequently (11 per cent) than from a hepatic artery of similar origin which was accessory (3 cases). Of the 50 cases in which dual cystic arteries were observed, only 2 did not reveal the origin of a cystic artery from the right hepatic in Calot's triangle.

The Biliary Ducts.—Variations in the bile ducts are of such frequency and of such pronounced character as to be of vital concern to every surgeon. A disregard of the anomalies, especially of accessory hepatic ducts, courts injury to them, with resultant disconcerting postoperative leakage of bile. That the majority of benign strictures of the common duct are due to surgical injury during cholecystectomy is well known and has recently again been emphasized by Lahey, Wilson and Gilles-

7. The right, left and middle hepatic —small or of usual size. There is an accessory right hepatic from the superior mesenteric and an accessory left hepatic from the left gastric; 1 per cent (Fig. 3*B*).
8. Combination patterns of a replaced right hepatic and an accessory left hepatic or, the reverse of this, an accessory right hepatic with a replaced left hepatic; 2 per cent.
9. Celiac hepatic absent — the entire hepatic trunk derived from the superior mesenteric; 5 cases.
10. Celiac hepatic absent — the entire hepatic trunk derived from the left gastric; 1 case (Fig. 3*D*).

The Cystic Artery.—Typically, the cystic artery arises from the celiac right hepatic to the right of the hepatic duct in Calot's triangle, the boundaries of which are: inferolaterally, the cystic duct; medially, the hepatic duct, and cephalad, the liver. As a rule, the right hepatic and the cystic artery are located in the upper part of the triangle, the right hepatic having crossed under or over (12 per cent) the hepatic duct to reach the triangle. If, in any subject, the surgeon is in doubt as regards the identity of structures, a careful dissection or creation of this triangle will, in most instances, effect correct orientation.

The course of the cystic artery in the

Fig. 2.—*A*, typical pattern. The hepatic artery divides into a left, middle and right branch, the middle supplying the quadrate lobe. Two cystic arteries, the superficial (*SC*) distributed to the peritoneal (free) surface, the deep (*DC*) to the nonperitoneal attached surface of the gallbladder and underlying liver substance. The cystic duct (*CD*), 6 cm., after a long, nearly parallel course with the hepatic duct (*HD*), swerves posterior to it to open into the common bile duct (*CBD*) just above the duodenum. The supraduodenal artery of Wilkie (*SD*) is distributed to the upper anterior and posterior surfaces of the first part of the duodenum. The *retroduodenal* (*RD*) (posterior superior pancreaticoduodenal) forms an extensive arcade on the posterior surface of the duodenum and head of the pancreas, then joins a posterior branch of the common inferior pancreaticoduodenal (*CIPD*). The *dorsal pancreatic* (*DP*) at junction of splenic vein with superior mesenteric is distributed to, and courses downward along, the dorsal surface of the neck of the pancreas; its prominent left branch, the transverse pancreatic (*TP*), runs along the inferior surface of the pancreas where it ultimately unites with a terminal branch of the splenic; its smaller right branch joins the superior pancreaticoduodenal (*SPD*); another branch supplies the uncinate process of the pancreas. *B*, type with a replaced left hepatic artery (*RcLH*). as the celiacal hepatic here gives origin only to the right (*RH*) and the middle hepatic (*MH*). The artery supplying the left lobe of the liver is *not an accessory hepatic*, as commonly stated, but is the only left hepatic present being replaced by the left gastric (*LG*). The *supraduodenal* (*SD*) is a branch of the right hepatic (*RH*). The *dorsal pancreatic* (*DP*), instead of coming from the celiacal trunk or one of its branches (first part of splenic or hepatic), arises from the superior mesenteric (*SM*). The cystic artery (*C*) is double, for, as often is the case, its superficial and deep branch have separate origins. Interposed between them is a liver artery (*RIL*), most probably the posterior segmental branch of the right lobe, as judged from the liver casts of Healey and Schroy. Note the accessory hepatic duct (*AcHD*) near the deep cystic artery (*DC*). *C*, type with a replaced right hepatic (*ReRH*), as the celiac hepatic gives rise only to the gastroduodenal and left hepatic. The right and quadrate lobes of the liver are supplied by a branch from the superior mesenteric (*SM*). This branch is not, as commonly stated, an accessory right hepatic, but is a *replaced right hepatic* (*RcRH*). The cystic artery (*C*) here lies high; below it are the posterior segmental branch of the right lobe (*RIL*) entering the fissured area under the gallbladder and a large (4 mm.) accessory hepatic duct (*AcHD*) which runs close to and parallel with the cystic duct (*CD*). Emerging from the gallbladder bed is another accessory hepatic duct (*Ac. HD*). known as the *subvesical duct* which may readily be torn in a cholecystectomy when filamentous, as is often the case. *D*, type with an accessory left (*AcLH*). The celiac hepatic gives off its characteristic three branches, right, middle and left. Since the celiacal left hepatic is small, there is an accessory left hepatic (*AcLH*) from the left gastric, it *being accessory only in origin as it supplies a definite section of the left lobe*. The right hepatic is ventral to the common hepatic duct (10 to 20 per cent). The deep cystic (*DC*) takes origin from a looped section (caterpillar loop) of the right hepatic above the cystic duct and to the right of the hepatic duct. The superficial cystic (*SC*) arises from gastroduodenal via its *retroduodenal* (*RD*) *branch* to the left of the hepatic duct (*HD*), and courses *caudad to the cystic duct* (*CD*). Note in particular how the blood supply of the posterior surface of the duodenum via the retroduodenal artery (*RD*) may be tied up with that of the gallbladder. The cystic duct (*CD*) swerves to the posterior surface of the hepatic duct (*HD*), with which it is intimately united with connective tissue. The dorsal pancreatic (*DP*) arises from the superior mesenteric (*SM*) and has the common inferior pancreaticoduodenal (*CIPD*) branch.

superior mesenteric arte[illegible] first jejunal branch via a comm[illegible] pan-creaticoduodenal artery [illegible] each arcade has its own [illegible] aticoduodenal, that of the p[illegible]eric[illegible] arising at a higher level [illegible] pancreas.

Ramifications of the retr[illegible] about the supraduodenal, retr[illegible] and intrapancreatic portion of th[illegible] mon bile duct accounts, in a large [illegible] ure, for the rich vascularization [illegible] common duct, the latter again [illegible] crossed near its distal end by sev[illegible] branches from the retroduodenal arcade The posterior arcade comes to perfect display with mobilization of the duodenum and removal of a thin film of connective tissue (Toldt's fascia, remnant of the primitive mesoduodenum) that overlies it and the retroduodenal venous arcade. The latter is superficial to the arterial arcade and drains into the portal vein.

The retroduodenal artery is of decided surgical importance, for the following reasons:

1. The entire cystic artery (2 cases) or its superficial branch (6 cases) may arise from it. 2. In incisions of the common duct for removal of gallstones it may readily be injured, for it crosses its supraduodenal portion anteriorly. 3. One or two end branches of its arcade often cross under the superior mesenteric artery to supply the first part of the jejunum, a point to be remembered in gastrojejunostomies, *lest the first part of the small bowel be deprived of its blood supply.* 4. In ligations, explorations and transplantations of the common bile duct, especially of its intrapancreatic portion, the retroduodenal artery should be taken note of in order to avoid annoying hemorrhages. 5. In hidden bleeding that follows spontaneous rupture of the posterior duodenal wall by ulceration, the retroduodenal artery may be involved, more so than the supraduo[illegible] or the gastroduodenal. 6. In many [illegible] forms a suprapancreatic [illegible] the supraduodenal artery of [illegible] with the right gastric artery, [illegible] supplying the critical arterial [illegible] zone between the pylorus and [illegible] of the duodenum with a [illegible] spray of twigs. 7. I[illegible] may [illegible] anastomosed with the splenic or the ce[illegible] artery [illegible] a branch of the dorsal pancreatic artery which passes behind the common bile duct.

Relations of Arteries to the Biliary Ducts.—Relations of the biliary ducts to the right hepatic artery and its branches, especially the cystic, depend on the varied origin and mode of branching (early or late) and the course taken by the right hepatic. The following anatomic facts merit repeated recollection and didactic emphasis. In nearly 20 per cent of the cases the site of origin of the cystic artery is located outside the cystic triangle, i.e., the artery arises to the left of the hepatic or gastroduodenal artery and must accordingly, cross the bile duct system (usually the hepatic duct) to reach the triangle.

In the majority of cases the celiac right hepatic artery crosses the hepatic duct posteriorly, purely ventral crossings having been observed in only 12 per cent. In many instances the right hepatic is represented by two branches, one crossing the hepatic duct anteriorly, the other posteriorly. In cases of dual cystics, when the superficial cystic arises from an artery to the left of the hepatic duct (right, middle or left hepatic), it usually crosses the hepatic duct anteriorly. In such cases the deep cystic artery may arise in the triangle from an aberrant right hepatic derived from the superior mesenteric which, in its ascent to the triangle, crossed the common bile duct, often at the point of juncture of the cystic duct where it may be injured or severed. In 7 per cent of the cases the superficial cystic swung cau-

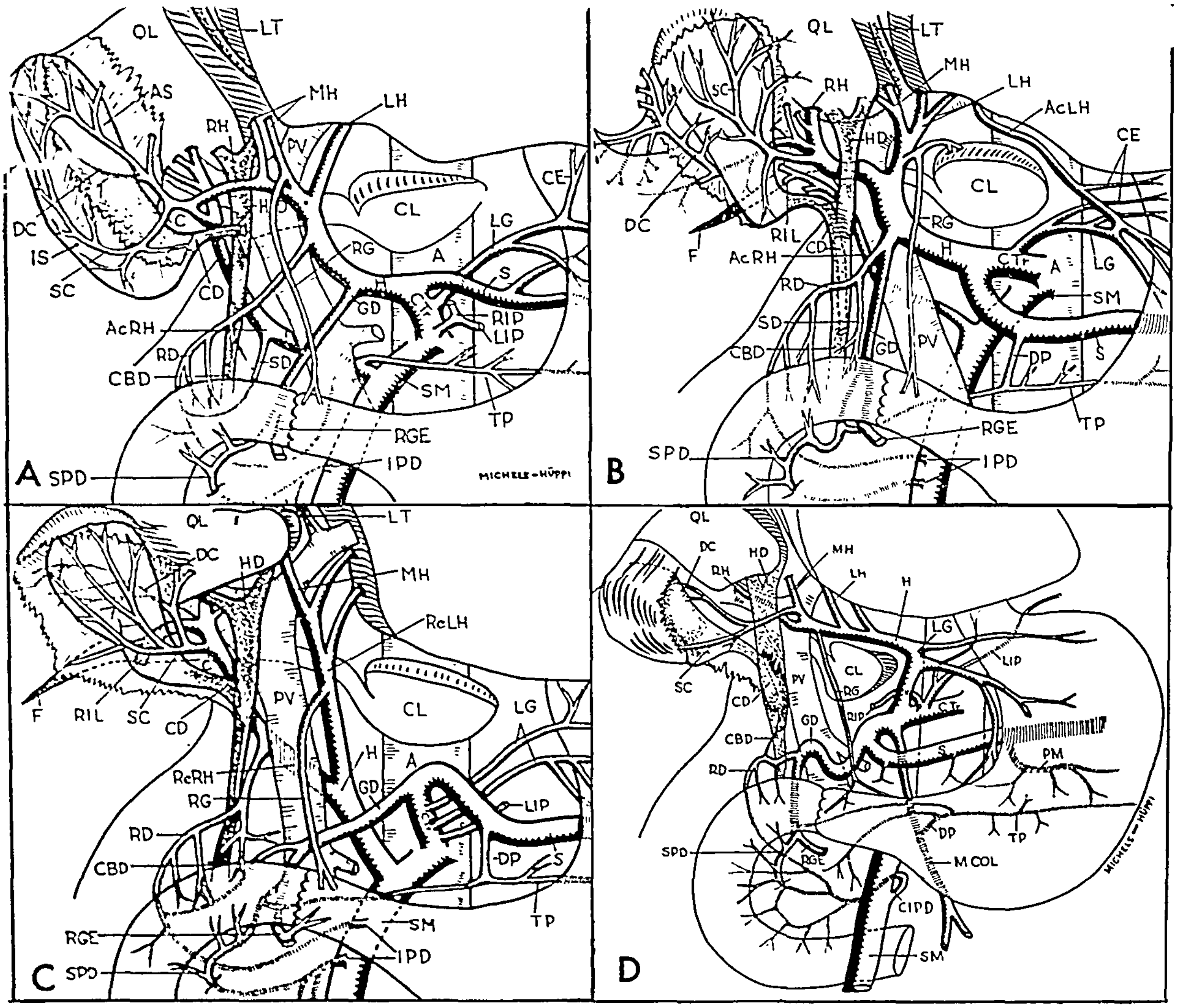

Fig. 3.

duct, or from some other source, as the middle hepatic, left hepatic, gastroduodenal and retroduodenal. *Dual cystic arteries, accordingly, are not fortuitous anomalies but constitute a prevalent mode of blood supply to the gallbladder, they having been observed in 50 (25 per cent) of the 200 specimens investigated.*

This percentage of dual cystics is considerably higher than that reported by Lipshutz (10 per cent), Daseler and his collaborators (14 per cent), Flint (15 per cent), Belou (19 per cent), Brown (21 per cent) and many others. The high incidence (25 per cent) is due to the fact that I dissected the hepatic branches up to their very entry into the liver, thereby on many occasions finding a high, hidden cystic, which usually turned out to be the deep branch. Furthermore, in many cases the points of origin of the two cystic arteries from the right hepatic were so close as to simulate one cystic, when actually two were present. Only 1 triple cystic was observed in 200 bodies.

The statistics with regard to the various modes of origin of the single and double cystic arteries and the normal and aberrant arteries from which they spring are too long and too varied to be recorded

plicada. Acentua que os aspectos são perpetuamente diversos, fato que deve ser levado emc consideração quando se planeja realizar operações importantes nesse orgão. Atendendo a que o afluxo arterial é tão imprevisivel e porque existem tantas variações, poucos vasos colaterais devem ser atingidos nos casos em que é necessário contar com uma circulação colateral depois da ligadura da arteria principal. De forma alguma pode-se admitir que a ligadura da grande arteria hepática seja realizada inpunemente. De acordo com os estudos feitos por Behrend, Gordon-Taylor, Vaughn, Gray, e Ramstrom, algumas das chamadas mortes de causa hepática após as colecistectomias, dão atribuidas a lesão, ligadura ou pinçamento da arteria hepática direita. A eficiência atual das vinte e seis colaterais do figado so poderá ser determinada por estudos futuros, nos quais se incluem a experimentação nos animais, as pesquizas arteriográficas e a necrópsia.

RESUMEN

El autor describe en detalle la Michels complicada y constante variedad de abastecimiento sanguineo hepático, incluyendo la criculación colateral. Gran enfasis es puesto en el hecho que el cuadro es continuamente variado y que esto hecho debe ser recordado y considerado con la mayor seriedad cuando una operación mayor es llevada a cavo. Como la circulación hepática es tan poco definida y porque existen muchas variaciones anatómicas se puede confiar solo en pocas de los canales colaterales para establecer una adecuda circulación que conpense en el húgado cuando el tronco principal hepático común del tronco celiaco ha sido ligada. Por lo tanto en ninguna circustancia debe considerarse que la ligadura de la arteria hepática pueda efectuarse impunemente. De acuerdo con los estudios de Behrens, Gordon-Taylor, Vaughn, Gray, y Ramstrom, algunas de las llamadas muertes hepáticas, consecutivas a una colecistectomía, son atribuides a sección, ligadura o pinzamiento de la arteria hepática derecha. La verdadera eficiencia de los 26 conductos colaterales del higado solo podran determinarse en estudios posteriores, incluyendo experimentación animal investigación arteriográfical y autopsias.

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Sometimes give your services for nothing, calling to mind a previous benefaction or present satisfaction . . . For where there is love of man, there is also love of the art. For some patients, though conscious that their condition is perilous, recover their health simply through their contentment with the goodness of the physician.

—*Hippocrates*

that injuries are more apt to occur to the hepatic duct than to the common bile duct.

What seemingly is the common bile duct is often not the common duct but the hepatic duct firmly united by dense connective tissue with the cystic duct, constituting the well-known, short (1 to 3 cm.) and long parallel cystic ducts (6 cm.). The length of the hepatic duct depends on the site of opening of the cystic duct, which may occur anywhere along the duct, even on its anterior aspect and, after a half circle spiral, on its left side. In cases in which the union of the two ducts has been prolonged to the level of the duodenum (6 cm.) or to a point just above or below it, there is usually no supraduodenal portion of the common bile duct, or very little. Such long-veiled and hidden cystic ducts may not only harbor residual gallstones but, because of their abutments to the hepatic duct, may lead to injury of the latter during cholecystectomy.

Accessory hepatic ducts are but aberrantly placed low (extrahepatic) tributaries to the hepatic duct, to its right or left branch, to the common duct or to the cystic duct itself. In this sense the term "aberrant hepatic duct" is much more appropriate than the term "accessory." This was shown by Healey and Schroy, who in 1953 made the *first statistical analysis of the bilobar segmental arrangement of the biliary tree* as observed in 100 liver corrosion casts made with vinyl acetate injections at the Daniel Baugh Insti-

Fig. 4.—Some of the 26 collateral arterial pathways to the liver, as ascertained in 200 dissections: 1. Routes through hepatic arteries arising from sources other than the common celiac hepatic trunk. 1. Accessory left hepatic (*AcLH*) from the left gastric (*LG*). 2. Accessory right hepatic (*AcRH*) from superior mesenteric (*SM*). 2. Nonhepatic routes capable of connecting with branches of severed hepatic arteries: 1. Infragastric via right and left gastroepiploics (*RGE*> <*LGE*) and gastroduodenal (*GD*) to the right, and short gastrics (*SG*) to the left. 2. Supragastric, via right and left gastrics (*RG*> <*LG*). 3. Infracolic, via the arc of Barkow in posterior layer of the great omentum, blood may be routed directly into the gastroduodenal (*GD*) through right gastroepiploic (*RGE*) and right epiploic (*RE*) in Type 1; indirectly into it via posterior epiploic (*PE*), transverse pancreatic (*TP*) and its connections in Type 2. Left limb of arc is always made by the left epiploic (*LE*). 4. Paraesophageal—or hepatogastric. Cardioesophageal (*CE*) branches from the left gastric (*LG*) and splenic (*S*) via its short gastrics (*SG*) unite with similar branches from accessory left hepatic (*AcLH*). 5. Retroesophageal. Recurrent branch of left inferior phrenic gives off cardioesophageal (*CE*) branches that unite with those derived from accessory left hepatic (*AcLH*), short gastrics (*SG*), and accessory left gastric (*AcLG*). 6. Transpancreatic. Blood leaving the splenic (*S*) through the dorsal pancreatic (*DP*) or a. pancreatica magna (*PM*) and caudal pancreatic (*CP*), or coming from the arc of Barkow through a posterior epiploic (*PE*) enters the transverse pancreatic (*TP*) via which it may course into the superior pancreaticoduodenal (*SPD*), right gastroepiploic (*RGE*) or gastroduodenal (*GD*) to reach the hepatic trunk (*H*). 3. Routes over arteries outside of the celiac blood supply. 1. Superior mesenteric (*SM*) via the inferior pancreaticoduodenal and the anterior and posterior pancreaticoduodenal arcades respectively made by the retroduodenal (*RD*) and superior pancreatocoduodenal (*SPD*), branches of the gastroduodenal (*GD*). 2. Superior mesenteric via its transverse pancreatic (*TP*) branch, which may connect with the *SPD, RGE* or *GD*. 3. Inferior phrenics coursing in the diaphragm unite with branches of the hepatic at attached areas of liver. Cardioesophageal (*CE*) branches of the recurrent branch of the left inferior phrenic anastomose with subcapsular branches of the hepatic in fossa for ligamentum venosum. 4. Superior phrenic from the terminal branches of the internal mammary, i.e., superior epigastric and musculophrenic communicate with branches of hepatic in diaphragm. 5. Ensiform branch of the internal mammary (Haller, 1756) coursing in the falciform ligament and ligamentum teres unite with terminal falciform branches given off by the left (*LH*) and middle hepatic (*MH*). 6. Vasa vasorum. An arteriole derived from the right inferior phrenic courses upward to liver along inferior vena cava (*IVC*). 7. Supply along the biliary ducts by arteriole *derived from the retroduodenal* (*RD*).

The collateral pathways outlined here on an anatomic basis, many of them small and insignificant, should *by no sort of deductive reasoning give rise to the impression that ligation of a major hepatic artery can be performed with impunity.* Behrend, Gordon-Taylor, Vaughn, Gray and Ramström have definitely committed themselves to the opinion that some of the so-called "liver deaths" following cholecystectomy are attributable to severance, ligation or clamping of the right hepatic artery. The actual efficiency of the outlined twenty-six collateral pathways to the liver can be determined only in further studies, including animal experimentation, arteriograms and postmortem investigations.

which favor the development of subcutaneous fibrosis in an area rendered vulnerable by the presence of chronic edema.

Clinical Manifestations. — The clinical manifestatons that accompany the postphlebitic leg secondary to deep venous thrombosis will differ from the postphlebitic manifestations of primary varicose veins, both in degree and in character, because of complications in the former due to physiologic disturbances of deep venous return, the greater degree of reversed circulation in communicating veins, and vasomotor disturbances induced in perifibrosis of the neurovascular bundle, and also because of the greater amount of lymph stasis.

Typically, postphlebitic ulceration occurs adjacent to the malleoli, especially the internal, frequently on the lateral but rarely on the upper portion of the leg.

The outstanding subjective complaint is pain, which may be (1) the orthostatic pain of chronic venous insufficiency; (2) neuritis of the long saphenous nerve, or (3) causalgia accompanied by vasomotor disturbances.

The procedures used in the surgical treatment of the postphlebitic leg with reference to a direct attack on chronic venous insufficiency are:

1. Ascending functional venographic studies.
2. Surgical management of the greater and lesser saphenous systems.
3. *Complete eradication of incompetent* communicating veins.
4. Deep vein ligation.

Ascending Functional Venographic Studies: Ascending functional venographic studies will determine the state of: (1) the deep venous system with respect to recanalization and degree of functional integrity; (2) communicating veins with respect to location, size and degree of incompetence, and (3) superficial veins with respect to functional integrity.

The technic used is a modification of procedures previously described.[2]

The patient is placed on the roentgen table with the foot rest in position and table tilted to 75 degrees, with the feet down. A tourniquet is placed slightly above the ankles to obstruct the superficial veins.

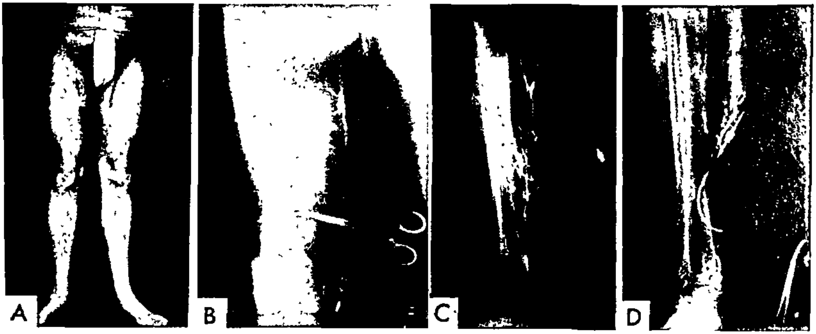

Fig. 2.—*A*, postoperative photograph of patient six months after ligations of bilateral superficial femoral vein and vena cava for recurrent pulmonary embolism following superficial thrombophlebitis with extension to the deep venous system. Note lack of edema and other evidence of chronic venous insufficiency. *B* and *C* (Case 1), failure of deep venous system to become visible. Superficial system is adequately filled; *D*, superficial veins are emptied partially after exercise.

tute of Anatomy of the Jefferson Medical College.

Following the usual mode of designating an accessory hepatic duct as one that is prone to be injured in biliary operations, i.e., one coursing in the cystic triangle, I observed, in this series of 200 bodies, 36 cases (18 per cent) of accessory hepatic ducts. In 10 per cent they joined the hepatic duct, in 3.5 per cent the right branch of the hepatic duct and in 1 per cent the common bile duct. In 2 per cent the cystic duct drained into an accessory hepatic duct which joined the normal hepatic duct. In 1 case two accessory hepatic ducts joined the hepatic duct. In another case one accessory duct joined the right branch of the hepatic duct and the other the hepatic duct. Contrary to general opinion, an accessory duct may arise from the *left side*. In 1 case such a duct came from the caudate lobe and joined the hepatic duct; in another, it joined the common bile duct, the cystic artery passing between it and the hepatic duct. Of surgical importance is the fact that, in many instances, an accessory hepatic duct arises or courses under the gallbladder. Being filamentous, such a *subvesicular duct* may be mistaken for strands of fibrous tissue or a nerve and can readily be torn or severed during cholecystectomy, causing disconcerting postoperative jaundice. In their corrosion casts Healey and Schroy observed the incidence of subvesicular ducts to be 35 per cent.

The Retroduodenal Artery. — It is in virtue of this artery that the duodenum is the only section of the intestine that has an anterior and posterior blood supply, the retroduodenal supplying the back of the duodenum. In a few recent texts (Grant, Anson, Philip Thorek, Hollinshead, Morris), the artery is named the posterior superior pancreaticoduodenal to distinguish it from the anterior superior pancreaticoduodenal.

Double pancreaticoduodenal arcades, one anterior and the other posterior to the head of the pancreas and back of the duodenum and made by different arteries, were first described by Haller in his Latin text in 1752. Forgotten because of an indefinite terminology for nearly two centuries, the artery on the back of the duodenum was unsuccessfully resuscitated by Belou of Buenos Aires in 1915 and by Petrén of Sweden in 1929 with the long descriptive term—posterior superior pancreaticoduodenal artery. Since the term proved too cumbersome to be remembered and since in 10 per cent of the present cases the artery forming the posterior duodenal arcade arose from an artery other than the gastroduodenal (which the superior pancreaticoduodenal rarely does), the term "retroduodenal" is used. *The term is shorter and can readily be remembered by every surgeon.*

Typically, the retroduodenal artery arises as the first *collateral* branch of the gastroduodenal. Its site of origin from the latter lies above, occasionally behind the duodenum and head of the pancreas and is often cryptic, being hidden by dense fibrous tissue. In its downward course it descends for several centimeters along the left side of the common bile duct, crosses its supraduodenal portion anteriorly and again descends for a centimeter or more along the right side of the common duct. At about the middle of the posterior surface of the head of the pancreas behind the intrapancreatic part of the common bile duct it forms a U-shaped, scalloped posterior pancreaticoduodenal arcade, branches (seven to ten) of which supply all three parts of the duodenum and, to a lesser extent, the head of the pancreas in the back. In its secondary and tertiary arcades, the posterior pancreaticoduodenal arcade is comparable to the anterior arcade made by the superior pancreaticoduodenal. Both arcades unite with the

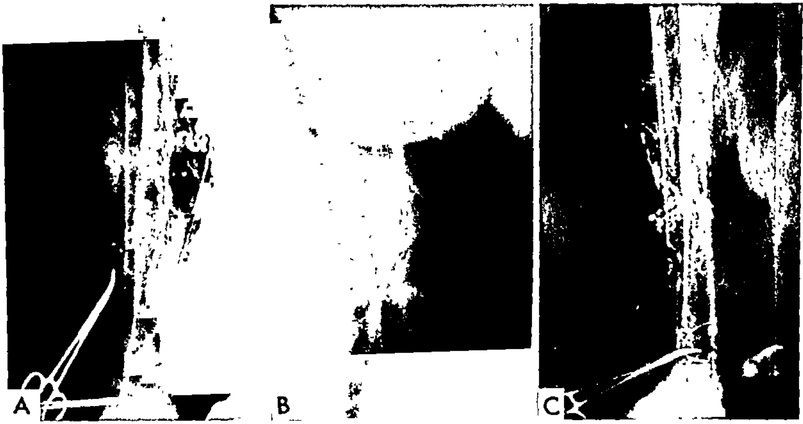

Fig. 6 (Case 5).—*A*, film demonstrating large incompetent communicating veins of both greater and lesser saphenous systems. Deep venous system in leg is incompletely and irregularly filled, but some valve stations are demonstrated. *B*, normal femoral vein is visualized above knee. *C*, venogram taken after exercise shows large communicating veins of lesser system and dye diffused into small superficial veins, with fair clearance of deep system.

Case 4.—A. A. (Fig. 5) had a postphlebitic leg after repeated attacks of thrombophlebitis involving the lower portion of the greater saphenous system. Induration, pigmentation and dermatitis were observed on the medial aspect of the lower half of the leg. An ascending functional venogram showed incompetent communicating veins and irregular filling and narrowing of both superficial and deep systems in the lower half of the leg. The deep system in the upper half of the leg was well filled and appeared normal (Fig. 5*A*).

A venogram taken after exercise (Fig. 5*B*) demonstrated good functional response. A venogram taken after the injection of dye through a polyethylene catheter above the pathologic area (Fig. 5*C*) showed good caliber of the greater saphenous, with normal valve stations, as contrasted with the vessel in the lower part of the leg. Note that the dye passes up the greater saphenous vein without entering the deep system.

Case 5.—E. T. (Fig. 6) had a postphlebitic leg. There had been recurrent attacks of superficial thrombophlebitis involving both the greater and the lesser saphenous system.

An ascending functional venogram showed the lumen of the greater saphenous vein decreased in caliber and irregular. Valve stations are not identified. Large incompetent communicating veins of both the greater and the lesser saphenous system are demonstrated.

The deep venous system in the leg was incompletely and irregularly filled, but some valve stations were well demonstrated (Fig. 6*B*). A normal femoral vein was visualized above the knee (Fig. 6*C*).

A venogram taken after exercise showed large communicating veins of the lesser system and dye diffused into small superficial veins with fair clearance of the deep system (Fig. 6*A*).

At operation a posterior stocking seam incision was made (Fig. 7). The greatly thickened and obliterated lesser saphenous vein was excised, and subfascial excision of communicating veins to both the greater and the lesser saphenous vein was performed as a first stage procedure.

Treatment.—Removal of the saphenous veins and their tributaries should be as nearly complete as possible when they are involved in the postphlebitic process.

The superficial veins, when [illegible] down and thickened in [illegible] dally around the proximal end of the cystic duct, i.e., left Calot's triangle to reach the peritoneal surface of the gallbladder, an item to be remembered in locating the superficial cystic. When the entire cystic artery or its superficial branch arises from the gastroduodenal or its retroduodenal branch, it must cross the common bile duct and often the cystic duct to reach the gallbladder. This common pattern should be borne in mind, since ordinarily the surgeon does not look for a cystic artery caudal to the cystic duct.

An artery that looks like a cystic and courses near and parallel with the cystic duct is not necessarily the cystic artery. It may be (1) an early liver branch of the right hepatic; (2) the lower branch of a right hepatic that bifurcated either in the triangle or before it crossed the hepatic duct, or (3) an aberrant right hepatic from the superior mesenteric or a branch of it being distributed to the fissured area, often found under the gallbladder. The detected cystic may be only one of the cystics, because frequently the right hepatic divides in the triangle into two major branches, one giving off the superficial and the other the deep cystic. Often the level of origin of the two cystics is far apart, placing the deep cystic high in the triangle, where it may be overlooked in a cholecystectomy. When torn, such a deep cystic may retract into the liver substance, effecting nevertheless very annoying hemorrhage.

The triangle may contain two right hepatic arteries of different origin, one arising from the celiacal right hepatic and the other from the superior mesenteric, the latter and not the former giving off the cystic. Approaching the cystic duct, such an aberrant right hepatic may erroneously be ligated instead of the cystic, causing severe necrosis of the liver with a fatal result.

In Calot's triangle a right hepatic of celiac origin may be high, low, or intermediate in position, depending on where it crossed the hepatic duct and, having crossed it, how and where it courses in the triangle. If it emits the cystic in the triangle, that artery will have a similar orientation, high, low or intermediate in position.

Union of the right and left branches of the hepatic duct usually occurs high in the portal fissure but may be retarded, giving rise to a short, low-forked hepatic duct. Through this fork, under or over it, the right hepatic or the cystic artery may pass. The situation may be the reverse of this (high-forked hepatic duct) with similar orientation of the two vessels.

Even after crossing the hepatic duct or the latter's right and left branch at a high level (high-forked hepatic duct), the right hepatic often descends in the cystic triangle to a region dangerously close to the cystic duct. The main reason for this is the fact that, both inside and outside the triangle, *the right hepatic often makes a characteristic caterpillar-like loop with a convexity that points downward, upward, to the right or to the left. In cholecystectomies such sinuosities of the right hepatic are extremely vulnerable, for the cystic may arise from the distal or proximal end of the loop, in the latter instance crossing it, usually anteriorly.*

Arterial relations to accessory hepatic ducts are often surgically dangerous and difficult to analyze. Since an accessory hepatic duct can traverse any part of the cystic triangle, the course of the right hepatic and the site of origin of the cystic may be above or below it. A high cystic artery may cross a low accessory hepatic duct, and vice versa. Fortunately, most of the accessory hepatic ducts joining the right branch of the hepatic duct are sufficiently high to be removed from surgical harm, but those joining the cystic duct or running parallel to it decidedly are not.

vorhebung der kommunizierenden Venen erörtert.

Die funktionelle aszendierende Venographie wird als ein wertvolles Hilfsmittel zur Auswahl einer rationellen chirurgischen Behandlung des postphlebitischen Unterschenkels angesehen, da dieses Verfahren die Bestimmung des funktionellen Zustandes des venösen Systems der unteren Extremitäten ermöglicht.

RÉSUMÉ ET CONCLUSIONS

Les séquelles tardives de la thrombose veineuse profonde ou de la thrombophlébite superficielle peuvent provoquer le syndrome dit du "lower leg."

Le traitement chirurgical du syndrome post-phlébitique peut être divisé en deux catégories: a) Procédés avant trait à l'insuffisance veineuse chronique per se. b) Procédés se rapportant directement aux séquelles de cet état. Ces techniques sont discutées.

L'auteur décrit les modifications physiopathologiques post-phlébitiques du membre inférieur, les manifestations cliniques de cette affection, ainsi que les facteurs physiologiques et anatomiques relatifs au retour veineux de l'extrémité inférieure, avec une mention spéciale quant aux veines communicantes.

La veinographie fonctionnelle ascendante est un guide précieux de la thérapeutique chirurgicale rationnelle, car elle permet de déterminer l'état fonctionnel du système veineux des extrémités inférieures.

SUMARIO E CONCLUSOES

As sequelas tardias da trombose venosa profunda e da tromboflebite superficial pode resultar na sindrome pós-trombotiva.

O tratamento cirúrgico das sindromes pós-flebíticas pode ser dividido em duas categorias:

(a) processos que visam a insuficiencia venosa crônica isolada;

(b) métodos que visam diretamente as sequelas.

Esses métodos são discutidos pelo A. que tambem analiza as modificações fisio-patologicas na perna pós-flebite.

Descreve as manifestações clínicas e discute os fatores fisiologicos e anatomicos que interferem no retorno venoso da extremidade com referencia especial às veias comunicante.

A venografia ascendente funcional é analizada, considerando-a o A. um subsidio valioso para a terapêutica da sindrome pós-flebitica porque auxilia a precisar o estado funcional do sistema venoso.

RESUMEN Y CONCLUSIONES

Las secuelas tardías de las trombosis venosas profundas o de las trombo flebitis superficiales pueden dar como resultados el "síndrome del miembro inferior."

El manejo quirúrgico de los sindromes postflebiticos puede diridirse en dos categorías:

a. Aquellos prodefimientos concernientes con la insuficiencia venosa crónica per se.

b. Aquellos prodecimientos que tratan directamente con las secuelas de esta condición.

Se discuten esos procedimientos.

Se consideran los cambios ocurridos en la pierna postflebítica.

Las manifestaciones clínicas se describen.

Los factores anatómicos y fisiológicos relacionados con la circulación venosa de retorno de la extremidad inferior se discuten con especial referencia a las venas comunicantes.

La venografía funcional ascendente se considera como una quia valiosa en

balanced by cases in which the result was fatal.

The collateral pathways outlined here on an anatomic basis, many of them small and insignificant, *should by no sort of deductive reasoning give rise to the impression that ligation of a major hepatic artery can be performed with impunity.* Behrend, Gordon-Taylor, Vaughn, Gray, and Ramström have definitely committed themselves to the opinion that some of the so-called "liver deaths" following cholecystectomy are attributable to severance, ligation or clamping of the right hepatic artery. The actual efficiency of the outlined twenty-six collateral pathways to the liver can be determined only in further studies, including animal experimentation, arteriograms and postmortem investigations.[*]

ZUSAMMENFASSUNG

Der Verfasser gibt eine ausführliche Beschreibung der komplizierten und ständig wechselnden Blutversorgung der Leber einschliesslich des Kollateralkreislaufs. Besonders hervorgehoben wird die Notwendigkeit, sich den ununterbrochenen Wechsel des Bildes vor Augen zu halten und ihn sorgfältig in Erwägung zu ziehen, wenn ein erheblicher chirurgischer Eingriff geplant wird. Da die Blutversorgung der Leber stets unberechenbar ist und wegen der vorkommenden anatomischen Varianten, kann man sich nach Abbindung des zur Leber führenden Hautstammes der A. coeliaca nur auf wenige kollaterale Gefässe zur Herstellung einer ausreichenden kompensatorischen Blutzufuhr verlassen. Unter keinen Umständen darf man daher annehmen, dass die Unterbindung der grossen Leberarterie ungestraft vollzogen werden kann. Die Arbeiten von Behrend, Gordon-Tayler, Vaughn, Grey, und Ramstrom weisen darauf hin, dass manche sogenannte Fälle von Lebertod nach Gallenblasenresektion auf Durchschneidung, Unterbindung oder Abklemmung der rechten Leberarterie zurückzuführen sind. Die wirkliche Leistungsfähigkeit der 26 kollateralen Gefässe der Leber kann nur durch weitere Untersuchungen, zu denen Tierexperimente, arteriographische Studien und Obduktionsbefunde gehören, bestimmt werden.

RÉSUMÉ

L'auteur décrit en détail le mécanisme de l'apport sanguin hépatique, compliqué et très variable, ainsi que de la circulation collatérale. Il insiste sur la modification constante du tableau, qui prend une importance particulière en cas d'opération. Il résulte d'un apport sanguin hépatique toujours imprévisible, et de certaines variations anatomiques éventuelles, que l'on ne peut compter que sur un petit nombre de canaux collatéraux pour établir une circulation compensatrice suffisante dans le foie en cas de ligature du tronc hépatique principal de l'artère coeliaque. C'est pourquoi l'on ne peut jamais assumer que la ligature de l'artère hépatique majeure peut être pratiquée impunément. D'après les études de Behrend, Gordon-Taylor, Vaughn, Gray, et Ramstrom, certains décès soitdisant hépatiques après cholécystectomie sont attribuables à la section, à la ligature ou au clampage de l'artère hépatique droite. Le plein fonctionnement des 26 canaux collatéraux du foie ne peut être déterminé que par des études supplémentaires, incluant l'expérience sur l'animal, les examens artériographiques et l'autopsie.

SUMARIO

O A. descreve minuciosamente a circulação hepática que é tão variável e com-ureteral orifice being entirely disregarded. This patient too is entirely well three and a half years after treatment. The bladder of M. L., a woman, had a capacity of less than an ounce, owing to extensive leucoplakia of the bladder which had become an epidermoid carcinoma involving about two-thirds of the organ. Now, twenty months after treatment, she still has a bladder with normal mucosa and a capacity of 2½ ounces.

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[*] [illegible] for more detailed [illegible] the reader is referred to [illegible] which are illustrated [illegible] and [illegible]

In using radioactive cobalt in nylon sutures I have found that one can almost always excise enough of the intravesical portion of the growth so that the thickness of the vesical wall, infiltrated with tumor, is not more than 1 cm.; consequently, one can invariably obtain a planar implant. In making such an implant it is important to free up the bladder on the outside of the tumor, so that the sutures can be placed as near the outside surface of the bladder as possible. The object is to destroy the actively invading cells and to disregard the main tumor mass.

In freeing up the involved portion of the bladder, I have often been impressed by the fact that the tumor is much larger and more extensive than one would have guessed by seeing and feeling it from the inside of the bladder only. This observation explains why, many years ago, when I used low intensity radium needles or radium emanations, I was not always able to control the tumor. The reason now is obvious—working from the inside of the bladder, one could only guess but could not know for certain how much tumor there was.

In 1945 Brent Wayman[3] introduced a new way of using radium needles in the treatment of carcinoma of the bladder. By inserting the needles from the outside of the bladder, he destroyed the tumor where it was invading normal healthy tissue, disregarding the large fungating mass that was growing within the lumen of the blad-

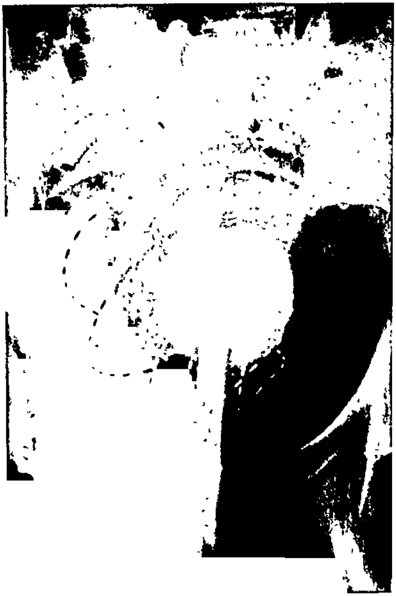

Fig. 2.—Postoperative roentgenogram showing CO60 pattern. Note biplanar implant used in this case.

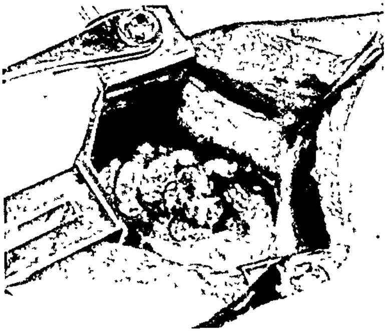

Fig. 3.—Photograph showing large sessile tumor adjacent to ureteral orifice. Protruding mass was excised, and CO60 was sutured into base of tumor, with disregard of ureteral orifice. Patient still well three and one-half years after operation.

The Postphlebitic Leg

An Evaluation of Surgical Procedures, with Special Reference to the Preoperative Use of Ascending Functional Venographic Studies

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AN essay on the treatment of the postphlebitic syndrome should properly begin with a consideration of those measures which may be used to reduce the incidence and degree of chronic venous insufficiency following deep venous thrombosis or superficial thrombophlebitis.

The late sequelae of either of these conditions may result in the "lower leg syndrome," although the typical postphlebitic leg is generally thought of as secondary to the deep venous thrombosis.

As this communication is essentially a consideration of surgical procedures, the fundamental importance of early and adequate heparinization will be merely mentioned.

Surgical management may be divided into two categories: (1) procedures concerned with chronic venous insufficiency *per se* and (2) procedures that deal directly with the sequelae of this condition.

In the first category may be included the operations used in the treatment of thromboembolism and acute superficial thrombophlebitis, namely, superficial femoral vein ligation, common femoral vein ligation, inferior vena cava ligation and excision of acutely thrombosed superficial veins.

The incidence of the "indurated leg" that results from repeated attacks of acute superficial thrombophlebitis is not inconsiderable, and the number of cases of thrombotic extension to the deep venous system via communicating veins is probably larger than is realized.

Recent clinical observation indicates that convalescence from the acute stage may be reduced to a few days, the typical postphlebitic changes entirely eliminated and extension to the deep veins prevented by prompt and complete excision of superficial thrombosed veins. It should be especially emphasized, however, that if operation is to be performed in the acute stage it should be early in the course of the disease, because of the danger of favoring the progression of thrombosis with subsequent pulmonary embolism when the communicating veins are already involved.

With deep venous thrombosis the situation is not as simple. Although anticoagulant therapy may largely obviate the early complications and late sequelae, there will nevertheless be a certain number of cases in which thrombosis is progressive and deep vein ligation will be indicated because

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usually rotates on its vertical or anteroposterior axis; in the presence of acquired torsion, on its horizontal axis.

In a recent paper on the relation of trauma to nephroptosis we enumerated the most common mechanical etiologic factors: the erect position of man, peculiarity of body form, lack of muscle tone, diminished intra-abdominal pressure and inherent weakness of the supporting renal and perirenal fascia. In the normal adult there is slight upward convergence of the vertical axes of the kidneys, as the lower poles are displaced laterally by the iliopsoas muscle and the upper poles medially by the liver and spleen. The iliopsoas muscle mass causes an oblique backward shift of the horizontal axis to form a 40-degree angle with the midline of the body. As the kidney begins to descend it remains in its vertical position, but as the downward displacement increases the organ is held back by the vascular pedicle, which causes it to rotate on its horizontal axis (Fig. 4). When the upper pole is displaced backward and the inferior pole forward, the kidney takes on an oblique position. The degree of torsion depends on the length and attachment of the pedicle. The prolapsed kidney exerts traction, elongating, narrowing or compressing the vascular pedicle. Superimposed torsion may actually twist the renal vessels, constricting the renal artery and thereby causing ischemia. Renal torsion can also be caused by retroperitoneal tumor, perinephritic abscess, tumefaction of the liver and spleen, or intrinsic renal masses.

Hydrodynamics may also be a contributing factor. Increased intrapelvic pressure, which results from obstruction due to kinking of the upper portion of the ureter, is caused by ptosis of the kidney. In turn, the resultant increased intrapelvic pressure may compress and constrict the vascular pedicle itself. Davis recently pointed out that, in many cases, pelvic hypertension can be corrected by operation.

Urologists with wide experience in the surgical correction of nephroptosis have observed that nephropexy relieved hypertension in certain patients (Abeshouse, Ritch and others). We, too, have observed this phenomenon for many years.

In 1940 McCann and Romansky made interesting observations on orthostatic hypertension. In studying hypertensive patients with nephroptosis, they made pyelograms with the patient in the recumbent and in the erect position and observed the effect of posture on blood pressure, glomerular filtration rate and renal blood flow. They utilized the inulin clearance test of Smith and his colleagues to determine the glomerular filtration rate and the diodrast test of White and Rolf to determine the total flow of renal plasma. In some patients with nephroptosis the erect position caused orthostatic hypertension, which resulted from diminution of the renal blood flow and relative constancy of glomerular infiltration. They noted that when ptosis and torsion were present the erect position caused traction on the pedicle, resulting in elongation, narrowing, compression or constriction of the renal vessels. This interferes with the afferent blood supply of the kidney which leads to the production of renin; renin, in turn, constricts the vasa efferentia of both kidneys, resulting in ischemia due to decrease of the total blood flow. The glomerular filtration rate remains relatively constant because of the compensatory effect of increased intraglomerular pressure. The authors made these deductions from detailed studies of 5 cases of orthostatic hypertension due to nephroptosis. Nephropexy was carried out in 1 case
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mon femoral pathway in the prevention of late sequelae of deep venous thrombosis should be recognized. The profunda femoris vein affords an abundant collateral pathway for the return of venous blood from the lower extremity when interruption by thrombus or ligature is limited to a site below the common femoral origin.

Ligation of the superficial femoral vein at its termination is a simple and comparatively innocuous procedure, does not contribute significantly to venous stasis and has considerable value in the presence of thromboembolism when the thrombus has not ascended to the common femoral level.

Unless the response to anticoagulant therapy is prompt, deep venous thrombosis should be treated by a combination of heparinization and bilateral ligation of the superficial femoral vein plus immediate ambulation. This greatly reduces the incidence of recurrent embolism, preserves the common femoral pathway and reduces the incidence of orthostatic venous overloading and stasis.

The following approach is advantageous because it is simple, direct and atraumatic.[1]

The incision, placed well medial to the neurovascular bundle, is carried down to the adductor longus muscle (Fig. 1*A*). A cleavage plane is then determined beneath the adductor longus fascia and carried over the lateral edge of the muscle to the origin of the common femoral vein (Fig. 1*B*). In this manner the femoral vein is approached directly from its medial aspect and may be isolated without the necessity of exposing the artery or surgically unimportant venous tributaries (Fig. 1*C*). Ligation is performed at the exact point of termination of the superficial femoral vein in order to prevent thrombus formation in a blind stump (Fig. 1*D*). Ligation should be bilateral.

If the source of embolization is higher than the common femoral origin, or occurs in spite of anticoagulation and bilateral ligation of the superficial femoral vein, ligation of the vena cava should be performed.

Ligation of the inferior vena cava is a more effective procedure, with a lesser incidence of incapacitating complications, than is ligation of the common femoral vein.

In order to lessen the edema and late manifestation of chronic venous insufficiency following ligation of the vena cava, the patient should be kept in bed, with the foot of the bed elevated, for two weeks.

Elastic bandages from the base of the toes to the groin should be worn for an indefinite period. Deep breathing and leg exercises should be performed at regular intervals during the early postoperative period, and resumption of normal activity should be gradual (Fig. 2*A*).

Physiopathologic Changes.—The physiopathologic changes are initiated by edema of lymphatic and venous origin. The actual bases for edema and the subsequent changes may be enumerated as follows:

1. Damage to small venules and capillaries occurring during the acute phase of the disease.
2. Permanent obstruction of thrombosed deep veins.
3. Recanalization of a thrombosed deep vein with destruction of valve function.
4. Varicosities of the secondary type.
5. Incompetence of the communicating veins.
6. Vasospasm. This is variable in degree and may be persistent.
7. Perivenous lymphangitis. Permanent perivenous fibrosis may result. Perifibrosis of the neurovascular bundle may be a major cause of continued vasospasm.
8. Poor hygiene, the moist foot incident to vasospasm, the presence of fungous infection about the toes and infected stasis ulcers afford a portal of entry for recurring attacks of lymphangitis and cellulitis,

geren Niveau nach Fixierung der Niere in einer höheren Lage.

RÉSUMÉ

1. Dans de nombreux cas l'hypertension essentielle est d'origine rénale.

2. L'examen de tout malade hypertendu devrait comprendre aussi une étude complète du système urinaire.

3. Il faut songer également à la ptose et à la torsion du rein comme facteurs étiologiques de l'hypertension rénale orthostatique.

4. Lors de la recherche étilogique d'une hypertension rénale orthostatique, il est indiqué de mesurer la pression sanguine, aussi bien en état d'activité normale qu'en position couchée, moment auquel elle devrait être abaissée de 30 à 40 mm. Il faut de plus pratiquer des pyélogrammes antéro-postérieur et latéral, en position debout et en position de supination.

5. La ptose et la torsion rénales ne produisent en général pas de symptôme; dans certains cas cependant, la position debout peut créer des troubles de la circulation sanguine, provoqués par la stase due à la pression postérieure ou à la torsion des vaisseaux sanguins rénaux, aboutissant ainsi à une hypertension orthostatique.

6. L'ischémie rénale résultant d'une diminution de la vascularisation sanguine est produite par l'élongation, le rétrécissement, la compression ou la constriction du pédoncule vasculaire.

7. Les malades atteints d'hyptertension orthostatique due à la torsion et à la ptose, ont été soulagés par la détorsion et par la néphropexie. Dans quelques cas, bien que la pression sanguine ne soit pas retournée à la normale, l'hypertension a diminué. Dans d'autres cas, les symptômes cérébraux, oculaires et cardiaques, qui couvrent le tableau de l'affection, ont été améliorés par l'abaissement et la stabilisation de la pression sanguine grâce à une fixation haute du rein.

SUMARIO

1. Em muitos casos a "hipertensão essencial" é de origem renal.

2. Um estudo completo deve ser feito durante o exame clínico do paciente portador de hipertensão.

3. A ptose e a torsão renais devem ser incluidas entre as causas etiológicas pois que podem causar hipertensão renal ortostática.

4. Na pesquiza da hipertensão renal ortostática as medidas da pressão arterial devem ser feitas no curso da atividade normal e depois de completo repouso, ocasião em que devem os valores se apresentar com 30 a 40 mm. mais baixos. As pielografias antero-posterior e lateral devem ser realizados com o paciente em decubito e de pé.

5. Em alguns casos a ptose e a torsão renais são assintomáticas; pode ocorrer, porém, que a posição erecta determine alterações tensionais porque a estase devida a pressão ou a torsão dos vasos renais resulta em hipertensão ortóstatica.

6. A isquemia renal consequente a diminuiçã do suprimento sanguineo é causada pelo estiramento, estreitamento, compressão ou constricção do pedículo vascular.

Polyethylene tubing is inserted into the origin of the greater saphenous vein. Thirty to 40 cc. of sodium hypaque (50 per cent) is injected at a moderate rate of speed. The film is exposed as the injection is completed. This technic shunts the dye from the superficial to the deep system.

After exposure of the first film the patient is asked to exercise by raising and lowering himself on his toes. A second exposure is made approximately one minute after the first. The second film shows the result of exercise in clearing the dye and provides a comparative picture of the functional state of the deep and superficial systems.

The proximal passage of a radiopaque medium against gravity in the superficial system, combined with failure of the deep venous system to opacify, has been regarded as presumptive evidence of deep venous obstruction.[3] I concur in this opin-

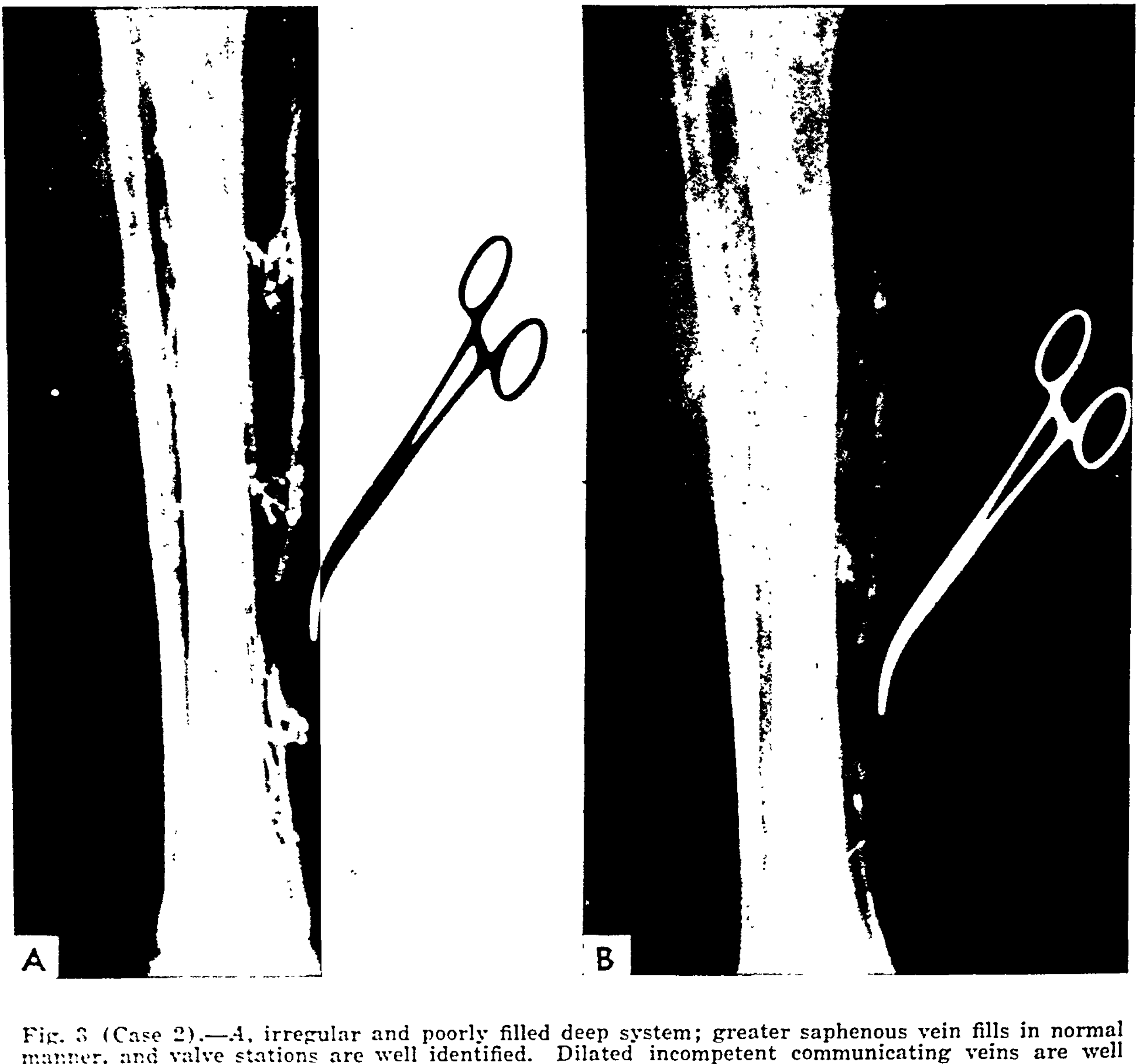

Fig. 3 (Case 2).—*A*, irregular and poorly filled deep system; greater saphenous vein fills in normal manner, and valve stations are well identified. Dilated incompetent communicating veins are well demonstrated. *B*, deep system is well cleared after exercise, while a considerable amount of dye remains in communicating and greater saphenous veins.

gical hematomas both in the anterior and in the posterior fossa. Nevertheless, many a patient with cerebral concussion, an injury less dramatic than many others and carrying little or no threat to life is neglected by the general practitioner and the specialist alike. As a result, many a patient in whose case only the diagnosis of cerebral concussion has been made remains incapacitated by severe headaches for months or even years.

The purpose of this communication, therefore, is to clarify and evaluate the much maligned symptom complex loosely termed "the postconcussion cerebral syndrome."

A patient with this syndrome, some weeks after injury, may be quite normal as judged by gross neurologic tests; he may have a normal electroencephalogram; roentgenogram of the skull and tests of the spinal fluid may give negative results, and even the pneumoencephalogram may be normal; yet the patient complains of severe headaches and exhaustion, as well as inability to return to his usual duties. In the courts of law such persons are often accused of malingering or of having a "litigation neurosis."[2]

The symptom complex following many cerebral concussions *consists of two major factors:* (1) bouts of severe headache or hemicrania, and (2) the syndrome of vasomotor (neurocirculatory) exhaustion.

The headaches, often severe, may begin in the suboccipital area, radiating to the vertex and at times to the area behind one eye. In other cases the pains are frontal and temporal, extending over the vertex to the occipital area.

Analysis of the symptoms of several thousands of such patients will reveal that headaches persisting for months or years after a cerebral concussion are *real* and that they are *extracranial* in origin. The headaches stem primarily from two sources: (1) the upper cervical-spinal nerve roots and (2) elements of the trigeminal nerve. Alternately, a combination of the two may exist.

Before going into greater detail, I wish to introduce a new term that describes and encompasses the complex of symptoms that follows injuries to the head and neck. My new term is *craniocervical syndrome.*

The Role of Cervical Trauma.—A patient who incurs concussion while riding in a moving vehicle always undergoes some degree of *cervical sprain,* and the vast majority of those with whiplash injuries of the neck have some degree of cerebral concussion[3] and, most certainly, sprain of the cervical portion of the spine.

"In almost every instance of head trauma, some of the force is transmitted

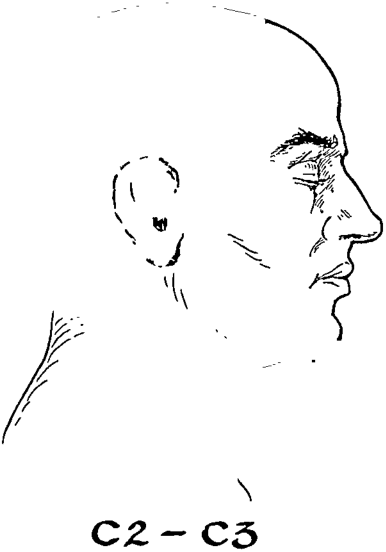

Fig. 1.—Cutaneous distribution of C2 and C3. Modified from Mayfield, F. H.: Neurosurgical Aspects of Cervical Trauma, Clinical Neurosurgery 2:85, Williams and Wilkins Company, 1955.

logic function of the deep veins *per se* as of incompetence of communicating veins in which the blood flow is reversed to the tissues superficial to the deep fascia.

VENOGRAMS IN ILLUSTRATIVE CASES

CASE 1.—C. W. (Fig. 2, *B*, *C* and *D*) had a postphlebitic leg, with a history of deep venous thrombosis following typhoid fever in 1916.

The deep venous system could not be visualized. This was considered evidence of occlusion of the deep venous system.

The superficial veins filled well and emptied partially after exercise. Operation was not performed on this patient, as the superficial system of veins was considered necessary for venous return in the extremity.

CASE 2.—W. B. had had deep venous thrombosis following an appendectomy twelve years earlier.

Ulceration in the medial supramalleolar region had recurred at intervals since it first developed, two years after the attack of thrombophlebitis.

An ascending functional venogram revealed an irregular and poorly filled deep system (Fig. 3*A*). The caliber of the greater saphenous vein was normal and the valve stations well identified. Dilated and incompetent communicating veins were well demonstrated. A venogram taken after exercise (Fig. 3*B*) showed the deep system well cleared of dye, while a considerable amount remained in the communicating and greater saphenous vein.

Operation consisted of ligation of the greater saphenous and stripping and subfascial ligation and excision of communicating veins.

CASE 3.—E. D. (Fig. 4) had had deep venous thrombosis twenty-five years earlier, after childbirth. Seventeen years prior to this examination she had struck her ankle against a bedpost and an ulcer had developed in the lateral supramalleolar region. There has been recurring ulceration since that time.

Stasis dermatitis and pigmentation were present on the medial aspect of the leg.

An ascending functional venogram that reveals an irregular contour and filling and inability to identify valve stations indicates a postphlebitic state of the deep system with recanalization. Incompetent communicating veins are identified. The veins of the superficial systems are of narrow caliber.

A venogram taken after exercise shows good functional clearance of the deep system, with retention of dye in superficial veins.

Surgical procedure: Excision of the lesser saphenous system and subfascial ligation and excision of communicating veins to both greater and lesser saphenous systems through a posterior subfascial approach.

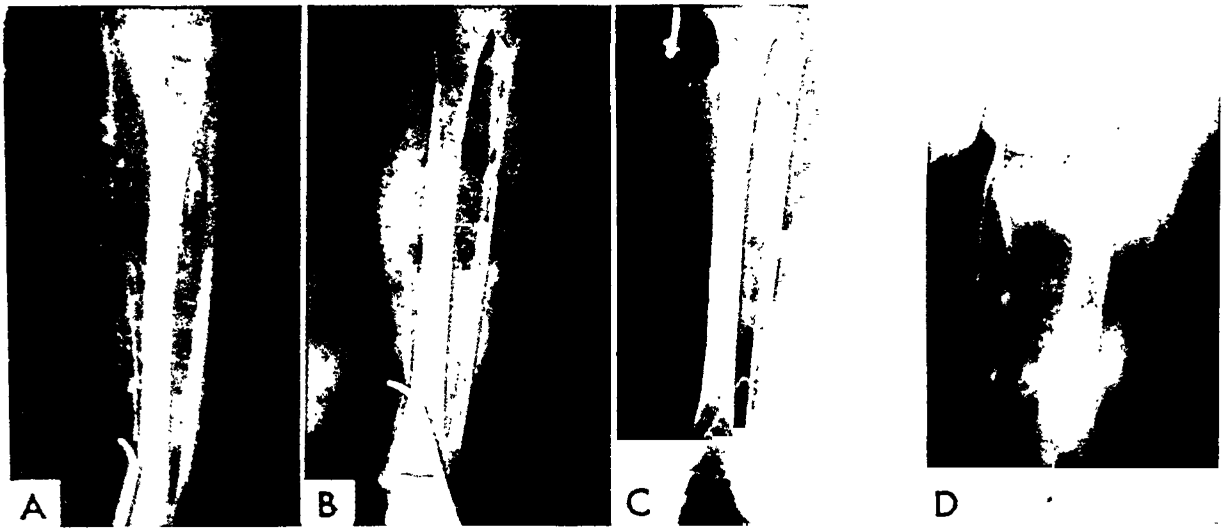

Fig. 5 (Case 4).—*A*, venogram showing incompetent communicating veins and irregular filling and narrowing of both superficial and deep systems in lower half of leg. Note well-filled and normal-appearing deep system in upper half of leg. *B*, venogram taken after exercise, demonstrating good functional response. *C* and *D*, venogram taken after injection of dye through a polyethylene catheter above the pathologic area, showing greater saphenous of good caliber with normal valve stations.

When the innervation of the scalp is disturbed by contusion, sensory changes will be discovered if careful testing is done. In the management of intractable severe occipital headache, Mayfield and others have observed that section, primarily of the second cervical sensory root intradurally, or of the second and third, will abolish the pain. Chambers,[11] reporting on a series of 35 patients who had undergone posterior rhizotomy of the second and third cervical nerves for occipital pain, stated that in only 1 did the procedure fail to bring relief. Chambers specifically pointed out that a psychoneurotic attitude, acquired after years of pain, on the part of the patient is not a valid deterrent to surgical intervention.

The Vasomotor Exhaustion Syndrome.—It is my conviction that the incapacitating symptoms, consisting of high-headedness, giddiness, exhaustion, insomnia and a feeling of insecurity, during periods of paroxysmal tachycardia, are all due to the stress reaction. This is often noted in patients with minor injuries, even, as a rule, when there has been no unconsciousness. This group of symptoms is caused by a fright reaction brought on by the conscious experience of a near catastrophe. This reaction is related to the stress or alarm reaction followed by the exhaustion syndrome as originally described by Selye.[12] It is best illustrated and contrasted by two types of injury: (1) severe trauma with a prolonged period of unconsciousness, and (2) a narrow escape from catastrophe.

In the first instance, the severely injured patient who is unconscious for a prolonged period and does not even remember the accident makes a prompt and complete recovery, while the patient who has had a narrow escape shows all the manifestations of the stress reaction produced by the shock of watching the oncoming catastrophe with a sense of complete helplessness.

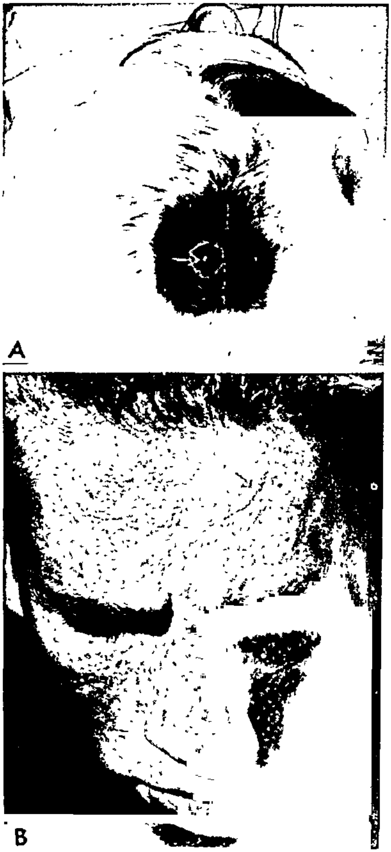

Fig. 4.—*A*, minute scar following local scalp contusion that produced attacks of left hemicrania, with pain behind left eye. *B*, healed scar involving twigs of left supraorbital nerve. Patient has periodic attacks of migraine-like headache.

SUMMARY

The author discusses accidental injuries to the head, together with the post-concussion syndrome. He points out that in the

Fig. 7.—*A*, posterior (stocking seam) incision used for excision of lesser saphenous system as well as subfascial ligation and severance of communicating veins of both greater and lesser saphenous systems.

cutaneous fat, are unable to function in a normal manner, constituting as they do part and parcel of the pathologic tissue.

It has been observed that the functional integrity of the saphenous vein is compromised when communicating veins are incompetent, even though normal-appearing valve stations have been identified venographically.

Complete eradication of incompetent communicating veins, including those feeding the ulcerated area, is of the greatest importance.

Effective ligation of these communicating veins of the greater saphenous system may be performed through a longitudinal incision on the medial aspect of the leg, extending from a short distance below the knee to the medial malleolus. When the subcutaneous fascia is indurated the incision is carried beneath the deep fascia, where wide separation of muscle from deep fascia may be obtained, and in the subfascial space the vessels are double-ligated and severed. These veins may be approached satisfactorily in the plane between the subcutaneous and deep fascia when the pathologic change in the tissue is not advanced.

Elimination of incompetent communicating veins restores the compartmentalization of the leg and thus increases the functional competence of the deep venous system even after the deep venous valves have been destroyed by thrombosis and recanalization.

A posterior subfascial approach, as described by Felder and his co-workers,[5] may be used for excision of communicating veins.

A cleavage plane is determined between the deep fascia and underlying muscles to the posteromedial surface of the tibia and the posterolateral border of the fibula, giving exposure for double ligation and severance of communicating veins of both greater and lesser saphenous system (Fig. 7).

Deep Venous Ligation: The rationale of deep venous ligation is questionable in the light of functional venographic studies. It is my present opinion that ligation should not be performed when these studies demonstrate adequate clearing of the dye from the deep system.

Surgical Procedures Dealing with Sequelae of Chronic Venous Insufficiency: *Lumbar Sympathectomy.*—These procedures have a limited but definite place in the treatment of the sequelae of deep phlebitis.

2. *Examinations of the Visual Field.*—These enable the examiner to detect defects in the field.

3. *Spinal Puncture.*—Spinal puncture is valuable for the determination of cell counts, the question of organisms, the Kahn test, and Lange colloidal gold test when indicated. An increase in protein is likely to be present. Spinal puncture should be discouraged in the presence of choked discs, since herniation of the brain through the tentorial notch or the foramen magnum may result in death.

4. *Pneumoencephalographic and Pneumoventriculographic Studies.* — Displacement, deformity, distortion or dilatation of the ventricles or the subarachnoid spaces can be detected by these means, which helps one to recognize the presence of an expanding lesion, hydrocephalus or cortical atrophy.

5. *Electroencephalographic Studies.*—Disturbance of the normal brain waves by a neoplasm or the presence of focal abnormalities, especially a delta focus, may be detected in the electroencephalogram.

6. *Angiographic and Arteriographic Studies.*—By these means one can outline a neoplasm. They are extremely useful in distinguishing lesions within and about the brain, especially lesions of cerebral vessels.

7. *Dye Studies in Combination with the Isotopes.* — As a diagnostic procedure, isotopes in conjunction with dye injected intravenously have a tendency to concentrate in an intracranial neoplasm (cysts excepted), making it possible to detect and localize a brain tumor by use of the Geiger counter.

Circumscribed benign and encapsulated tumors of the intracranial cavity are relatively easy to remove. Gliomas are the invasive types in the brain and should be regarded as malignant. Of this group, the medulloblastoma presents the most difficult problem. Glioblastoma multiforme may come on with precipitous suddenness and seems to originate most commonly in the white matter. Medulloblastoma and glioblastoma metastasize. In my own experience the only tumor of the brain that has shown definite evidence of metastasis is the medulloblastoma; several years ago, however, while in Vienna, I saw 2 patients with glioblastomas that showed evidence of metastasis.

Another group of malignant tumors of the brain is composed of the metastatic growths. Recurrent glioma of the brain, glioblastoma or spongioblastoma seldom metastasizes. The method of handling the latter group of neoplasms depends to a great extent on their location. Block dissection with total removal is the minimum operation to be considered. Lobectomy and, in some instances, total removal of the cerebral hemisphere is indicated and has proved effective.

For the glial group of tumors, medulloblastoma excepted, irradiation has proved disappointing, and in some instances the clinical progress would suggest that it accelerated the growth of the neoplasm. Irradiation after block dissection when recurrence has become evident has practically no effect on the lesion, not even in the relief of pain. I no longer advise or suggest irradiation therapy for the glioma group—medulloblastomas excepted—and I note that my results compare favorably with those of irradiation for the glioma type of tumor.

The various growths encountered, which include dermoid tumor, teratoma epidermoid tumor (cholesteatomas), chordoma and craniopharyngioma, are usually congenital. Meningioma, neuroma, angioma and hemangioblastoma are usually of mesodermal origin.

The pituitary tumors are usually mixed, but are distinguished as the chromophobe and the chromophil type.

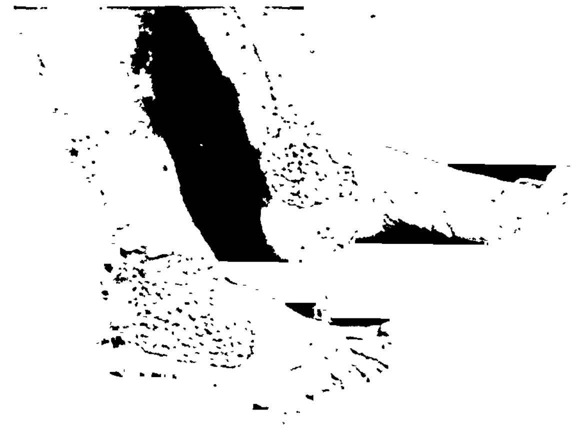

Fig. 9.—Bilateral postphlebitic ulcers secondary to deep venous thrombosis which required excision and split thickness skin grafts in addition to vascular operation plus lumbar sympathectomy.

advisable to ultilize a full thickness graft, applied preferably by the "cross leg" technic.

The Indurated Leg.—The "indurated leg" not infrequently requires block excision of pathologic tissue and application of healthy skin to the underlying muscle. In some cases the skin overlying the fibrotic and indurated subcutaneous tissue is healthy and may be utilized. In other instances the skin must be excised as well, and a split thickness graft used.

Various modifications of the Kondoleon procedure are used. A long incision is employed, and wide excision of fibrosed subcutaneous tissue is performed, with longitudinal incision or excision of deep fascia in order to allow apposition of the skin to the well-vascularized muscle. For more adequate vascularization, especially in those cases in which the skin is included in block excision and the indurated subcutaneous fascia is tightly adherent to the deep fascia, the latter is included with the excised tissue.

SUMMARY AND CONCLUSIONS

The late sequelae of deep venous thrombosis or superficial thrombophlebitis may result in the "lower leg" syndrome.

The surgical management of the postphlebitic syndrome may be divided into two categories: (a) procedures concerned with chronic venous insufficiency *per se* and (b) procedures that deal directly with the sequelae of this condition. These procedures are discussed.

Physiopathologic changes occurring in the postphlebitic leg are considered, and clinical manifestations are described.

The physiologic and anatomic factors related to the venous return of the lower extremity are discussed, with special reference to the communicating veins.

Ascending functional venographic study is considered a valuable guide to rational surgical therapy of the postphlebitic leg, as it enables one to determine the functional state of the venous systems of the lower exremity.

ZUSAMMENFASSUNG UND SCHLUSSFOLGERUNGEN

Die Spätfolgen von Thrombosen der tiefen Venen oder von oberflächlicher Thrombophlebitis können zur Entstehung des "Unterschenkelsyndroms" führen.

Die chirurgische Behandlung des postphlebitischen Syndroms lässt sich in zwei Gruppen einteilen:

a. Massnahmen, die sich mit der chronischen Insuffizienz der Venen als solcher befassen.

b. Massnahmen, die sich direkt auf die Folgezustände dieser Erkrankung erstrecken.

Diese Massnahmen werden erörtert.

Auf die physiopathologischen Veränderungen des postphlebitischen Unterschenkels wird eingegangen.

Die klinischen Erscheinungen werden beschrieben.

Die physiologischen und anatomischen Bedingungen, die auf den venösen Blutabfluss der unteren Extremität einen Einfluss haben, werden unter besonderer Her-thing but solved. Approximately 50 per cent of all deaths after operation for brain tumor in this clinic were due to acute edema of the lungs. The treatment of this complication has shown practically no improvement until recently. Since the introduction of antibiotics and sulfa drugs the incidence of terminal pneumonia has been greatly reduced, and in the past eight years death due to terminal pneumonia has been practically nil. Aspiration pneumonia occurred most frequently during World War II, primarily because of inexperienced and inefficient personnel. Edema of the pons occurred primarily in pontine lesions when a heroic effort was made to remove them. The incidence of unrecognized postoperative hemorrhage, fortunately, is very low—2 per cent. Careful postoperative follow-up observations should eliminate this entirely. Under "surgical shock" are listed deaths that occurred on the operating table. Anesthesia had no influence.

It is quite evident from these statistics that, if adequate satisfactory treatment can be instituted to counteract acute edema of the lungs, the operative mortality rate would drop 50 per cent.

It is fair to assume, therefore, that fluid and electrolytic balance in the immediate postoperative period is of the utmost importance. For the past fifteen years potassium, sodium and chloride evaluations have been made preoperatively, and the proper balance becomes increasingly important as the age of the patient increases. Evidence shows that the immediate postoperative time is a period of disturbed renal function. During the operation, and for about twelve hours thereafter, intravenous injections should be limited mostly to the replacement of lost blood, plus a sufficient quantity of 5 per cent dextrose in water to cover insensible losses. Saline solution, unless the blood chloride level is low, should be dispensed with. The necessity of maintaining postoperative fluid and electrolytic balance cannot be too strongly emphasized. The total fluid intake for the first three or four days should seldom be more than 3,000 cc. in twenty-four hours. Dextrose in water should be relied upon. One hundred Gm. of dextrose is sufficient to prevent ketosis. Some authors recommend withholding salt solution until after the fifth postoperative day. Others recommend a simple electrolytic combination of sodium, potassium and chloride in a 10 per cent solution of dextrose in water, or a 10 per cent amino acid mixture.

Evaluating and maintaining the fluid and electrolytic balance postoperatively should be most helpful in reducing operative mortality and complications, particularly edema of the brain and lungs.

The incidence of death from glioblastoma multiforme (Table 2) increased from 1936 through 1945, during which period extreme radical attacks were carried out on this type of tumor. Many multiple lobectomies and hemispherectomies were done. Of the deaths, 8 followed hemispherectomy. Justification for this type of radical operation, in my opinion, can be substantiated in that the survival of patients hemispherectomized and lobectomized for glioblastoma has ranged from two to eleven and one-half years.

The incidence of death from medulloblastomas has gradually decreased, in spite of radical removal followed by heavy irradiation. The survival period has ranged from two years to seventeen years and four months, which in my opinion justifies the additional risk of the primary operation. For single metastatic tumors of the brain I definitely advise removal. The survival period here has been as long as three and one-half years.

Table 3 contains a more detailed account of the cause of death from the various types of lesion, and the natural conclusion, which I wish again to emphasize, is the

tamiento quirúrgica racional de la pierna postflebitica puesto que lo capacita a uno a determinar el estraco funcional del sistema venoso de las estremida des inferiores.

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. . . I had seen enough to have an idea of the difficulties of an operation, but none of its pleasures: now I see a good operation with the pleasure I used to feel at the successful solution of Euclid's problems,—a pleasure greater than almost any I know. I have acquired that taste, that high relish, for these, without which no man can exert himself for the attainment of any art; and am only surprised that I was so long blind.

. . . I wish to caution you against any irritation from apparent want of confidence on the part of patients. This is one of the regular trials of a young practitioner,—one that he must expect to experience even from the lower classes, still more from the higher. Such an expression, however it may operate on the feelings, must not be allowed to influence the external appearance or conduct; for the expression of such irritation is a fair proof that the want of confidence is well founded, since it shows a want of self-command.

—*Warren*

Peace comes only from loving, from mutual self-sacrifice and self-forgetfulness. Few today have humility or wisdom enough to know the world's deep need of love. We are too much possessed by national and racial and cultural pride.

—*Donegan*

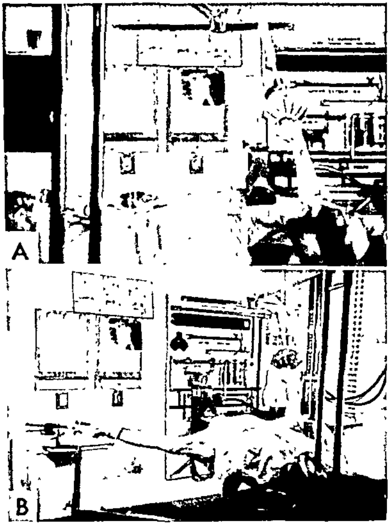


Fig. 2.—*A*, technic. Patient on Albee fracture table. Injured arm secured to traction bar by means of muslin bandage loops from olecranon bone pin to footpiece in upper extremity position. Shoulder abducted to 90 degrees and elbow flexed to 80 degrees, with hand suspended from overhead crossbar. Note accessibility of lesion to roentgen study. See text for details of manipulation. *B*, efficient countertraction to the opposite arm, stabilizing the injured shoulder joint and permitting reduction of the fracture-dislocation. Opposite shoulder in full abduction—tied to traction bar with elbow extended. Bar must be tied to wall fixture to maintain fixed position when *extreme traction is applied during reduction.* See text.

and the fingers suspended to an overhead bar with the elbow in not more than 80 degrees of flexion. A 5/32 inch Steinman pin is drilled through the olecranon and connected to the traction bar by means of a separate loop of heavy muslin bandage over each protruding end of the pin. Both loops must be kept close to the point of emergence of the pin through the skin and crisscrossed or tied together close to the elbow before being tied to the traction bar. Failure to do this will result in bending of

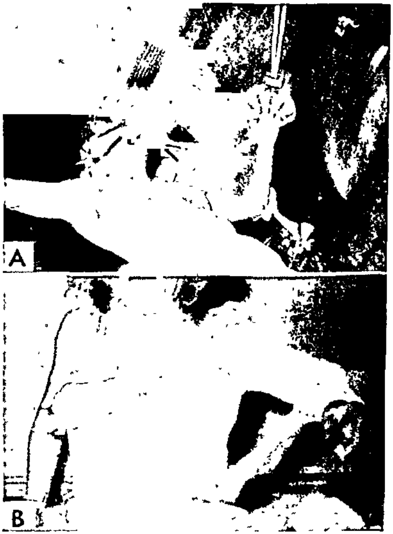


Fig. 3.—*A*, anterior view showing traction and countertraction. Overcorrection of shortening at fracture site removes bony obstacles to reduction of the humeral head. *B*, patient ambulatory in spica cast twenty-four hours after reduction. Fixed traction maintained between olecranon bone pin and thoracic wall, which must be heavily padded. See text for management of convalescence.

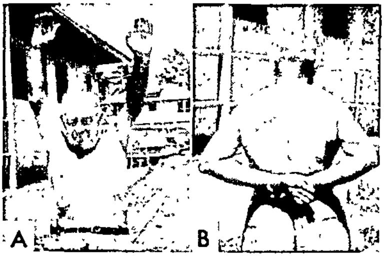


Fig. 4.—*A*, patient J. B., aged 61, a golf caddy. End result eight months after treatment for fracture-dislocation of left shoulder by fixed traction method. Complete rehabilitation with asymptomatic shoulder. *B*, minimal muscle atrophy and restriction of internal rotation.

superficial ulceration in the bladder, in the region of the right ureteral orifice. There was no function of the right kidney. At operation it was observed that the carcinoma had extended outside the bladder and was infiltrating the adjacent pelvis (Fig. 1). In an attempt to help this patient, a biplanar implant of radioactive cobalt in nylon sutures was done (Fig. 2). Three months later an excretory urogram showed the right kidney to be functioning normally. Since then the patient has refused any further medical examination or treatment. He is up and about and voids once every two or three hours, but I am convinced that even though he has lived a year, he still has carcinoma.

Another patient, T.W.J., had a carcinomatous mass 5 to 6 cm. thick, occupying about half of the bladder and the true pelvis. I excavated this mass, then sewed the radioactive cobalt into what may be considered the wall of a surgically created diverticulum. Healing took place. The patient was able to void normally about once every two hours, but he died six months later from extensive metastases to the liver.

The third patient, J. S., had undergone an extensive segmental resection five months before I saw him. An exploratory procedure revealed so much infiltration of the adjacent tissue that it was technically impossible to suture radioactive cobalt in nylon sutures into the carcinoma. I compromised by plunging a number of low intensity radium needles into the growth and supplementing this procedure with telecobalt therapy.

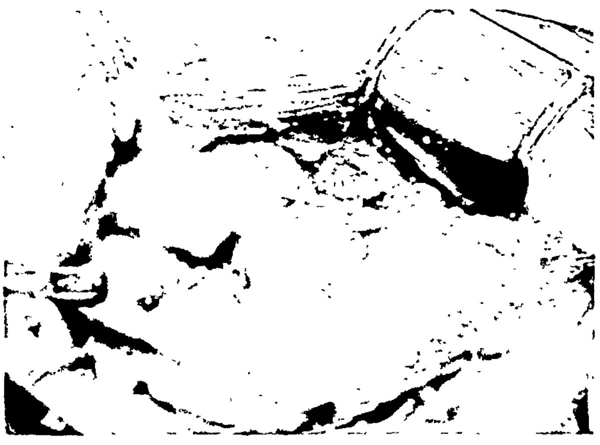


Fig. 1.—Photograph taken at operation with bladder wide open shows only a small area of superficial ulceration inside bladder. Note extensive invasive tumor outside bladder. Carcinoma is obviously inoperable.

From these and similar experiences, I have come to realize that "recurrence following segmental resection" frequently means that the carcinoma is outside as well as inside the bladder, and that one can do little, even in the way of palliation, for such a patient. The surgeon who first treats a carcinoma of the bladder is the only one who has any chance to cure it, if it can be cured.

All of the 16 patients who were treated with radioactive cobalt and whose lesions were confined to the vesical wall now have normal bladders and void normally. If their lymph nodes are involved or distant metastases have occurred they may die from the carcinoma, but they are not and will not be "urinary cripples."

Four of the more dramatic cases seen in this series include that of the very first patient, already described, who is still well and living a normal life four years after the operation. My second patient, O.W.C., was referred to me for interstitial radioactive cobalt therapy because he had severe asthma and in his urologist's opinion could survive total cystectomy. The lesion was 6 cm. long by 3 cm. wide and infiltrated the entire thickness of the vesical wall. At the time of writing, three and a half years after treatment, his bladder is normal and has a normal capacity, and clinically he is well. Another patient, C.K.B., had a large sessile tumor overlying the left ureteral orifice (Fig. 3). After the main tumor mass had been excised, radioactive cobalt sutures were placed in the base of the tumor, the presence of the

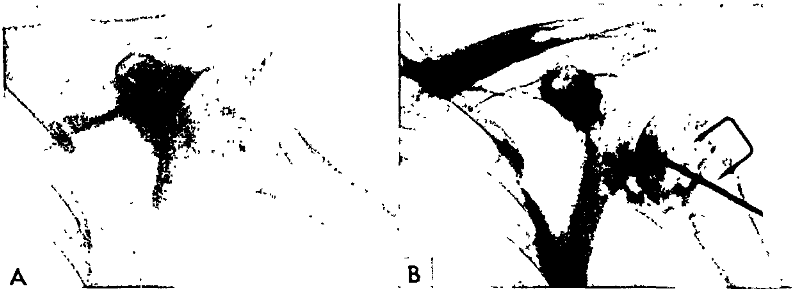


Fig. 6.—*A*, patient J. P., injured Sept. 15, 1952, in central Florida, when he swerved his car to avoid a wheel which had broken loose from a truck-trailer coming from the opposite direction. The car struck a pole and he sustained a fracture-dislocation of the left shoulder and a fracture of the femur. He was brought to Miami ten days later and, in view of the delay, I elected to do an open reduction. This case is shown to demonstrate the advantage of applying fixed traction during the course of operation. *B*, open reduction performed with upper extremity attached to traction bar by means of an olecranon pin. Minimal fixation devices were utilized to restore position of fracture at shoulder joint. Three and a half years later, calcification of the capsule is evident, as well as inferior subluxation. Abduction is limited at 80 degrees, with mild limitation of internal and external rotation. Patient works full time as a waiter in a local restaurant.

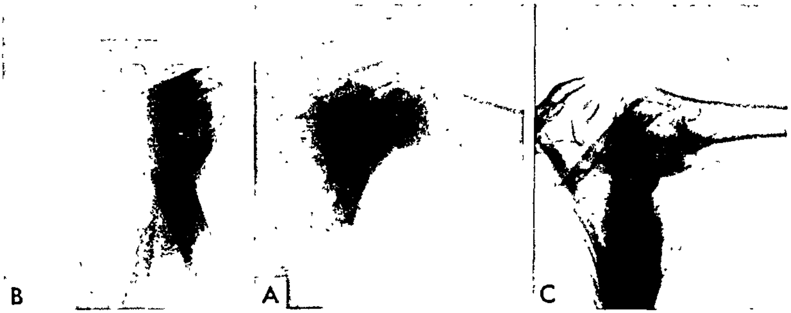


Fig. 7.—*B*, patient M. M., aged 51, injured June 21, 1953, in a motor accident, shows a comminuted fracture through surgical neck of humerus with anterior and rotational dislocation of the humeral head. Several fractural lines extend into humeral head but there is only minimal displacement of the greater tuberosity. *A*, film taken in operating room. Immediate reduction was done by fixed traction method. Head of humerus is derotated and in satisfactory alignment. *C*, end result three years later. Complete restoration of circulation through humeral head. No evidence of aseptic necrosis. Full range of painless motion regained.

have not been comparable to those obtained with other skeletal injuries. I attribute this to the difficulties encountered in the application of traction to the upper extremity, which are so considerable that the maximum pull available has not been employed. Although methods of obtaining fixed skeletal traction have been described, they fall short in not providing for countertraction that will not only make full reduction possible but permit the reduced position to be maintained during convalescence.

Adequate reduction and fixation should

der, where it could do no harm. My primary object, like Wayman's, is to destroy the tumor where it is actively growing into normal tissue. For that reason I never attempt to do a transurethral resection of an infiltrating carcinoma of the bladder. Unless one knows that one can actually resect all of the vesical wall that is involved in the tumor, including the few distant invading cells, an attempt at transurethral resection will often be futile.

The object of using radioactive cobalt in nylon sutures in treating this lesion, therefore, is to destroy the tumor at its periphery, where it is actually invading the tissue. The main bulk of the tumor, that which is visible cystoscopically, matters little. Only the cells at the periphery of the growth, the cells that are actually invading the tissue, are important. If a barrier can be placed at that point, what happens to the main bulk of the tumor is of no serious consequence, as it is relatively harmless. Whether it sloughs off or is removed by diathermy at the time of the surgical intervention makes little difference.

This situation is comparable to that in a case I observed a few years ago. A Wilms tumor filled half the abdomen of an infant. The tumor measured about 15 cm. in length and 10 cm. in diameter. Roentgen ray therapy caused the mass to shrink to such an extent that when I removed it, six weeks later, it did not measure quite 3 by 4 cm. On section one could barely identify tumor cells with the microscope. The bulk of the tumor was completely destroyed; but along the periphery, where the circulation was good, a few scattered, actively growing tumor cells could be seen. The identical situation occurs, at times, after segmental resection of a vesical tumor or after transurethral resection. Too frequently, after removal of the bulk of tissue, a few live carcinoma cells are left; no barrier has been placed, and the effort has been futile.

It is this basic fact that forced upon urologists the performance of total cystectomy, and it is the same basic knowledge that makes one realize that with radioactive cobalt in nylon sutures used as a planar implant one has a source of radiation that can and does furnish a carcinocidal dose to a localized area more readily and more accurately than it can be delivered by any other method.

By employing interstitial radiation—using flexible nylon sutures containing radioactive cobalt—one achieves the same result one obtains by total cystectomy, with the great advantage that the patient is left with a normal urinary tract instead of a cloaca or the necessity of using some "device."

SUMMARY

An analysis of 22 cases of vesical tumor treated, up to the time of writing, with radioactive cobalt (CO60) is presented, and illustrative cases are briefly reviewed. As a result of these experiences it has become evident that carcinoma of the bladder should be divided into three main categories for the purpose of treatment. By the use of interstitial radioactive cobalt in the treatment of infiltrating carcinoma of the bladder one can achieve the same result as by total cystectomy, with the great advantage that the patient is left with a normal urinary tract instead of a cloaca or the necessity of wearing some "device."

Author's Note: The major part of this work was done in association with the Drs. Maxfield, radiologists of Dallas. Without their help, encouragement and knowledge of radio-isotope therapy I should have been unable to obtain such apparently satisfactory results.

ZUSAMMENFASSUNG

Es liegt ein Bericht über 22 mit radioaktivem Kobalt (Co^{60}) behandelter und bis zur Niederschrift der Arbeit beobachteter Blasengeschwülste mit kurzer Dar-

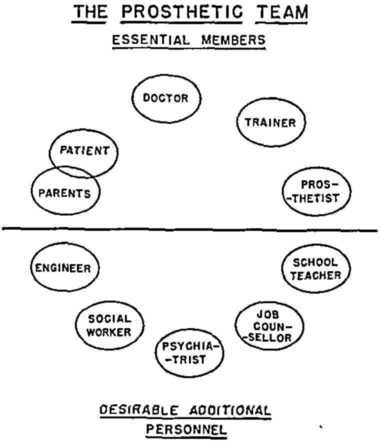
and the social service worker report their impressions of the child's problem, and a group decision as to the best course of therapy is reached. This may be preprosthetic physical therapy or other treatment.

If the patient is judged ready for a prosthesis, it is prescribed. After its fabrication the device is checked for fit and function, and training in its use is provided. The child returns to the amputation conference at intervals of three to six months for review of his progress. If repair or a replacement of the prosthesis is necessary, it is ordered. If further training, psychologic help or other therapy is indicated, this is prescribed.

The children examined by the UCLA group have presented all manner of deformities. In some the loss may be as little as one or more digits. The foot or hand may be functional, or it may be deformed and have little or no function. The site of amputation may be at any level. The deformity may be a malformation of the extremity rather than an amputation. Since treatment varies according to the type of deformity as well as the age of the patient, we have arbitrarily divided the deformities into two categories, complicated and uncomplicated. If the anatomic and functional status of the extremity proximal to the level of amputation or deformity is normal, or nearly so, the deformity is classified as uncomplicated (Birch-Jensen exogenous group)[4]. Surgical intervention here is rarely indicated except to ablate functionless vestigial digits, which may be cosmetically offensive or may interfere with the function of the prosthesis. Traumatic amputations are included in this group, since the fitting problems are similar. Present prosthesis knowledge permits the fitting of functional artificial limbs at any level above the carpal and tarsal areas. There are no "sites of election" in the upper extremity. All possible length should be preserved.[5] Fitting and fabrication in these cases is usually not difficult. Acceptance of the device and training in its use may offer more serious problems. The services of a psychiatrist, a trainer, a social service worker and a teacher may be necessary.

In some instances phocomelia and some other types of deformity are rather grotesque, with ill-formed and distorted terminal segments. These are frequently accompanied by dysplasia of the hip or shoulder joints, short femurs or humeri, limited function of the knee or elbow and divers muscular anomalies. Such deformities we have designated complicated (Birch-Jensen endogenous group).[4] Fitting is more difficult. Impaired function of the extremity invariably makes control and use of the artificial limb a greater challenge to the prosthetic team than the uncomplicated deformity. Our ability to help these people is limited. Further study and investigation of their problems is necessary.

Surgical intervention for complicated deformities is most frequently indicated



were also present. In 1915 Labey and Paris observed that when the congenital, incompletely rotated kidney became mobile, displacement occurred on its transverse axis. In 1923 Baggio called attention to the danger of failing to recognize anomalous rotation when ptosis is present. In 1934 de la Peña and Raguz commented on the difficulty of making a roentgenographic diagnosis of acquired or congenital torsion. In 1948 Prather described the new renal syndrome of medial ptosis, in the presence of which elongation of the vascular pedicle might well cause ischemia and renal hypertension.

Papin in 1938 and Weyrauch in 1939 reported extensive studies on the anomalies of renal rotation.

In 1938 Schroeder and Steele observed 2 cases of unilateral hydronephrosis associated with ptosis in a series of 71 cases of essential hypertension.

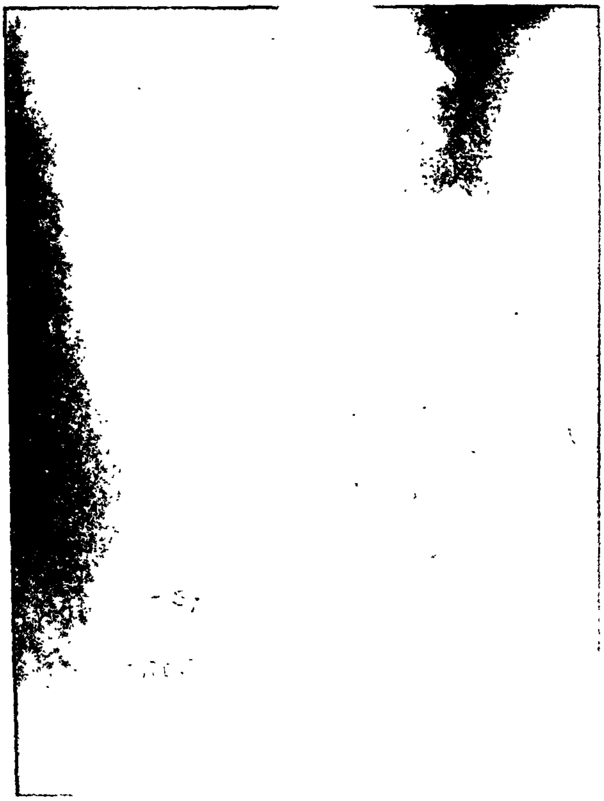


Fig. 2.—Retrograde pyelogram with patient in erect position. Note normal position of right kidney after detorsion and nephropexy. Left kidney still presents torsion and ptosis.

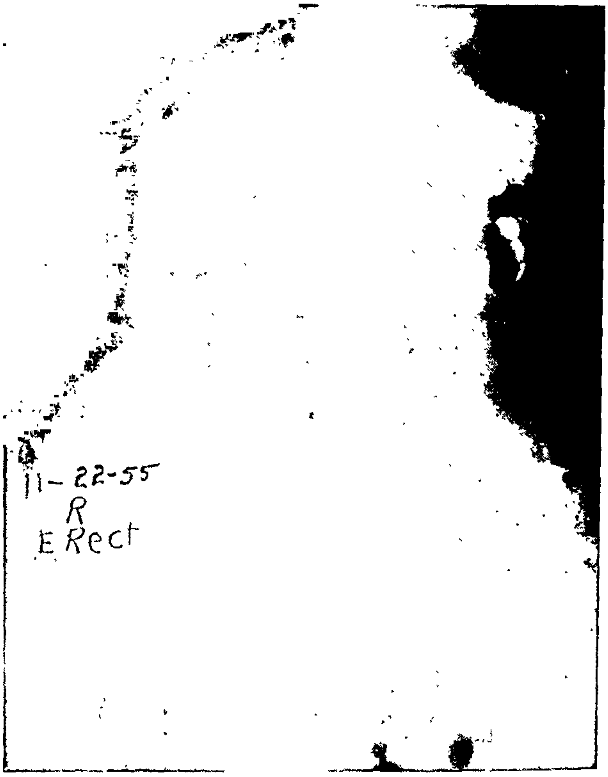


Fig. 3.—Retrograde pyelogram with patient in erect position. Note normal position of kidneys and regression of hydronephrosis (after bilateral detorsion and nephropexy).

In 1940 McCann and Romansky studied, in detail, orthostatic renal hypertension due to nephroptosis. They suggested appropriate treatment, surgical or supportive, for orthostatic hypertension due to ptosis. Abeshouse, in 1940, in an excellent monograph, completely classified the types of renal disease that may cause unilateral renal hypertension, including ptosis and torsion. In 1941 Hines and Lander called attention to the rôle of heredity in the development of renal hypertension.

Etiologic Factors.—We are concerned mostly with acquired renal torsion. Renal hypertension is less likely to accompany congenital renal rotation, as the vascular changes due to mechanical factors affecting the pedicle are usually absent. In the presence of congenital torsion the kidney

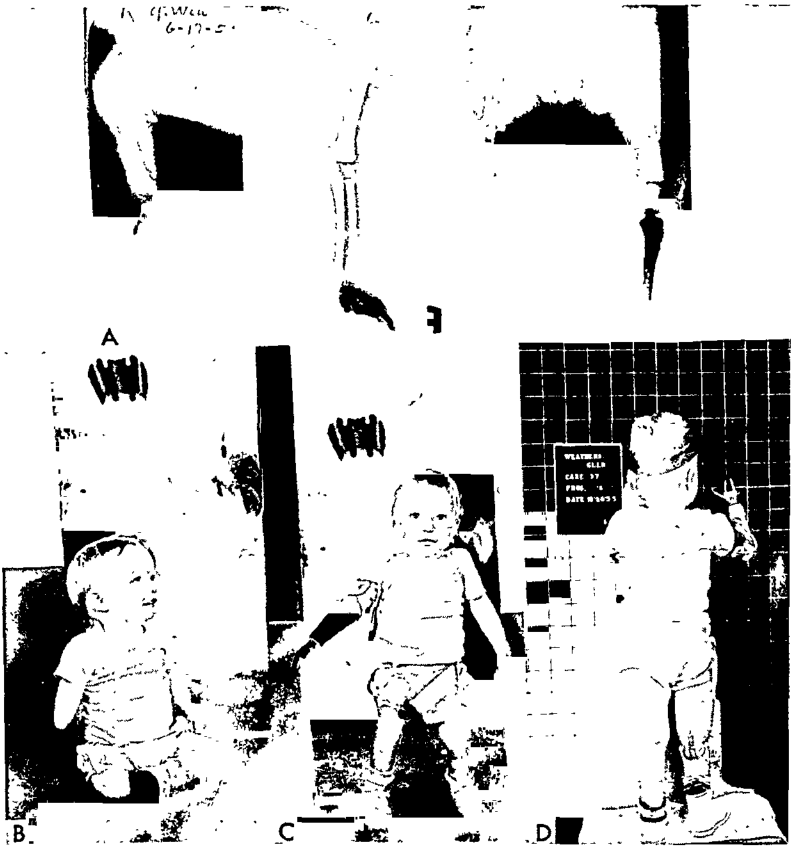


Fig. 3.—*Above*, roentgenograms showing (left to right) right upper extremity with single, short forearm bone and single vestigal finger; left upper extremity with webbing of index and middle fingers, and bifid right femur and knee disarticulation. *Below* (left to right), photographs showing short right below elbow, and knee disarticulation stumps: pylon type right lower prosthesis and short below elbow device with infant passive hand; articulated right artificial leg and actively controlled hook.

dle fingers, four metacarpals, from the second of which two fingers arose, an undeveloped thumb that functioned as a unit with the index finger and, on the left, a short malarticulated bifid humerus with a small hand-shaped functionless appendage distal to it, was seen in March 1955 (Fig. 5, *A* and *B*). He was provided with a modified prosthesis for use above the elbow, which was fixed at 135 degrees and a 10x hook for the left side (Fig. 5*C*). His neuromuscular development was insufficient to permit a satisfactory hook opera-

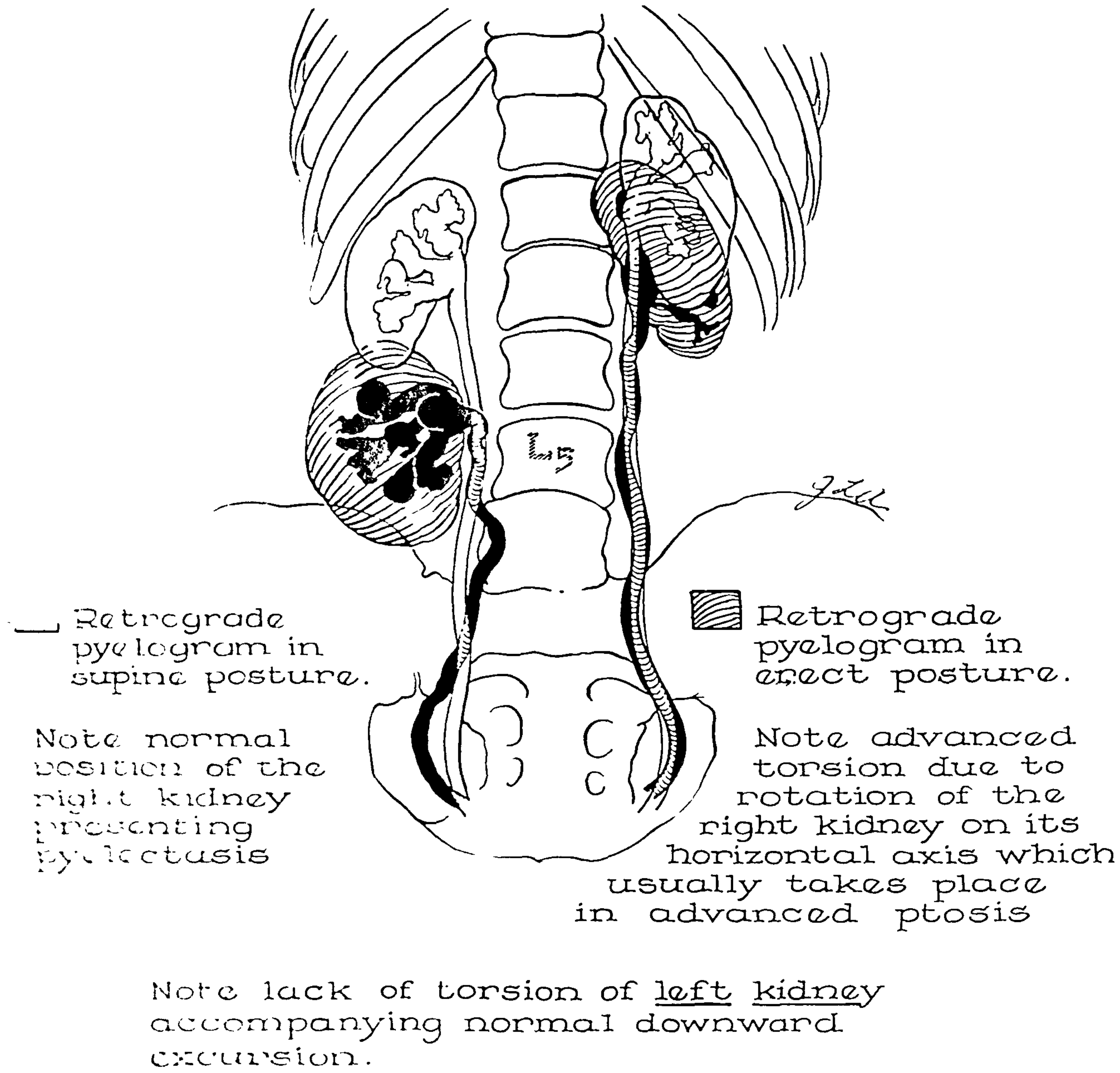

L5
Retrograde pyelogram in supine posture.
Note normal position of the right kidney presenting pyelectasis
▨ Retrograde pyelogram in erect posture.
Note advanced torsion due to rotation of the right kidney on its horizontal axis which usually takes place in advanced ptosis
Note lack of torsion of left kidney accompanying normal downward excursion.

Fig. 4.—Artist's sketch showing pyelographic effects with the patient in the supine and in the erect position (*see text*).

matic improvement, with disappearance of episodic cardia, cerebral and ocular symptoms. McCann and Romansky emphasized the fact that nephroptosis is not accompanied in all cases by orthostatic hypertension, and advised appropriate surgical or supportive treatment when nephroptosis is found to be the etiologic factor.

In most patients, movable kidney *per se* causes no symptoms. In some instances of nephroptosis, however, interference with the blood supply, due to stasis from back pressure or to twisting of the renal blood vessels as a result of renal ptosis and torsion, leads to orthostatic hypertension.

Hines and Lander pointed to heredity as a contributing factor in the development of hypertension in patients suffering from renal disease. They made a detailed study of 264 patients suffering from some functional prostheses at any level of loss. Suction socket wearing in the fourth year is generally feasible. We know of 1 instance of successful fitting at the age of 15 months. Absence of a portion of the upper extremity, particularly distal to the elbow, is compensated for by the congenital amputee to a remarkable extent. He must be convinced that improved function will outweigh the inconvenience of wearing a prosthesis (Cases 6 and 7). We do not prescribe functionless hands on a cosmetic basis.

Decision as to the optimum time for fitting the child and the type of apparatus prescribed are based on several factors: (1) the level and nature of the amputation; (2) the age of the patient, and (3) the attitude of the child and his parents toward the wearing of prostheses.

The level and nature of amputation determine to a considerable extent the type of prosthesis prescribed.[5] The prescription must be modified according to the patient's age. Neuromuscular development of the infant permits only gross motions.

A child begins standing and walking at about the end of its first year. He should be given something to stand on. Initially this may be a jointless pylon (Case 3). When good balance is attained an ankle can be added, and at about the age of 3 he can probably operate a knee joint.

At to the upper extremity, a child under a year of age can push and pull only, so the infant passive hand is used (Cases 3 and 5). The mother can pre-set a passive elbow (Case 1). At the age of approximately 2½ years the child will have developed sufficiently to operate a small hook. Two-handed activities away from the body are thus provided. Not until he approaches the age of 4 is the child able to understanc the mechanics of a fully functioning prosthesis and to make active use of it.

Training.—As yet there is no unanimity

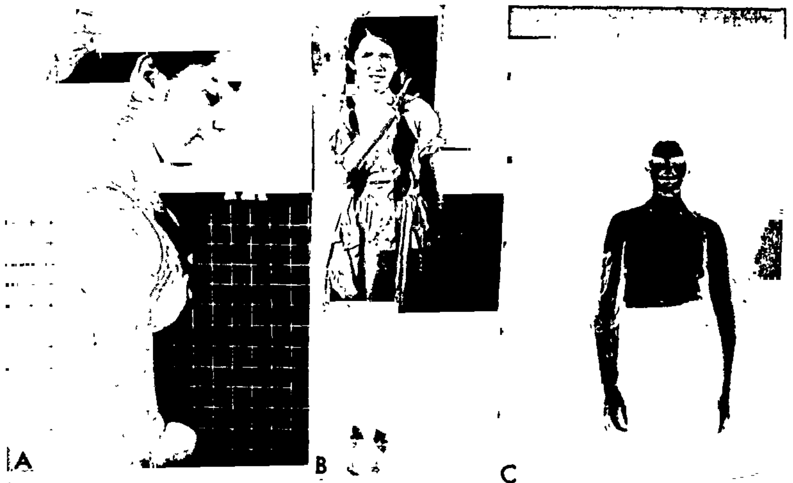


Fig. 7.—*A*, very short-below-elbow amputation on right. *B*, prosthesis with hook. *C*, prosthesis with adult functional hand, which is larger than patient's normal hand.

renal diseases, as it may cause orthostatic renal hypertension.

4. In searching for etiologic orthostatic renal hypertension, the blood pressure should be measured during ordinary activity and after strict recumbency, at which time it should be 30 to 40 mm. lower. Anteroposterior and lateral pyelograms should be taken with patient in both the supine and the erect position.

5. In most patients, renal ptosis and torsion cause no symptoms; in some instances, however, the erect position may cause interference with the blood supply because of stasis due to back pressure or twisting of the renal blood vessels, thus resulting in orthostatic hypertension.

6. Renal ischemia resulting from a decrease in the blood flow is brought about by elongation, narrowing, compression or constriction of the vascular pedicle.

7. Detorsion and nephropexy have relieved patients suffering from orthostatic hypertension due to torsion and ptosis of the kidney. In some, although the blood pressure did not return to normal, the hypertension was less severe. In others, the overshadowing cerebral, ocular and cardiac symptoms were ameliorated by stabilizing the blood pressure at a lower level by fixation of the kidney in a high position.

ZUSAMMENFASSUNG

1. Der "essentielle Hochdruck" ist in einer Reihe von Fällen auf renalen Ursprung zurückzuführen.

2. Eine umfassende Untersuchung des Hochdruckpatienten sollte eine vollständige Untersuchung des Harnapparates einschliessen.

3. Zu den ursächlichen renalen Erkrankungen gehören die Senkung und Drehung der Niere, die einen orthostatischen renalen Hochdruck hervorrufen können.

4. Beim Studium der Möglichkeit eines orthostatischen renalen Hochdrucks als Krankheitsursache müssen Blutdruckmessungen sowohl während normaler Aktivität als auch nach absoluter Ruhelage vorgenommen werden; im letzteren Falle können Werte erwartet werden, die 30 bis 40mm unterhalb der bei Aktivität gewonnenen liegen. Anteroposteriore und seitliche Pyelogramme sollten sowohl in Rückenlage als auch bei aufrechter Stellung des Kranken angefertigt werden.

5. Senkung und Drehung der Niere verursachen in den meisten Fällen keine Krankheitserscheinungen; manchmal aber kann die aufrechte Stellung durch Rückstauung oder durch Knickung der Nierengefässe zu einer Verlangsamung des Blutstromes und zur Behinderung der Blutversorgung der Niere führen mit dem Resultat eines orthostatischen Hochdrucks.

6. Eine durch Verminderung der Blutzufuhr bedingte Blutleere der Niere kann durch Streckung, Verengung, Zusammendrückung oder Einschnürung des Gefässstieles hervorgerufen sein.

7. Behebung der Nierendrehung und Nephropexie haben zur Beseitigung der Beschwerden von Kranken mit orthostatischem Hochdruck als Folge von Torsion und Ptose der Niere geführt. In manchen Fällen wurde zwar nicht eine Rückkehr des Blutdrucks zur Norm aber doch eine Senkung erzielt. In anderen Fällen besserten sich die im Vordergrund des Krankheitsbildes stehenden Gehirn-, Augen- und Herzsymptome durch Stabilisierung des Blutdrucks auf einem niedri-

Solitary Cyst of the Os Calcis in Adults and Children

Report of Eight Cases

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THIS lesion of bone is usually detected incidentally after roentgenograms have been taken for signs and symptoms referable to other parts of the foot or to the ankle. In a small percentage of cases symptoms of pain in the heel on weight bearing and mild tenderness in the same area may lead one to suspect solitary cyst.

Incidence.—According to the literature the average age of the patient at the time of occurrence or of diagnosis is approximately 15 years. The lesion is somewhat more common in the male than in the female, although in 4 of the cases here reported the patients were 9 years of age or younger, and the sex distribution was equal among these.

In 1877 Virchow first described solitary bone cyst in a tubular bone, but not of the os calcis. In 1931 J. R. Moore listed 32 cases of tumor of the os calcis at Johns Hopkins Hospital but observed no bone cysts in these. He noted mention of 4 such cysts in the literature of the previous fifty-one years.

Of 1,740 bone tumors listed at the Johns Hopkins Hospital in 1931, 2 per cent involved the os calcis.

In 1932, Coley and Sharp stated that benign bone cyst in the os calcis is exceedingly rare.

N. R. Smith reported 1 case of solitary cyst of the os calcis in 1930; Sobel and Beclere, 1 case each in 1936, and Fitte and Mulcahy, 4 unproved (?) cases in 1939. In 1943, McLaughlin described 1 case in a series of 26 cases involving various bones. Copleman, Vidoli and Crimmings reported 3 cases in 1946, in 2 of which surgical treatment was employed. Janes reported 1 case in 1946 and Verstandig 1 case in 1947.

In 1950, Meyerding and Jackson reported 1 case of a lesion diagnosed as giant cell tumor, though with a picture similar to that of solitary or unicameral cyst. They noted that the lesion probably corresponded to the unicameral cysts of the os calcis reported by others (Copleman; Vidoli and Crimmings; Janes; Dunn; Jaffe and Lichtenstein).

Stewart and Howel in 1950 reported a series of 46 solitary bone cysts or "regressive osteoclostomas," 4 of which were in the os calcis. The average age of the patients was 15 years. About 65 per cent were male.

Etiologic Theories.—To my knowledge, no final agreement has been reached as to the cause of these lesions.

Geschicter and Copeland expressed the opinion that solitary bone cyst represents the healing or healed stage of giant cell tumor. Coley and Higinbotham suggested that these cysts probably begin with a subcortical hemorrhage followed by localized bone destruction, a zone of vascular granulation tissue in which osteoclasts (giant cells) are present, then fibrosis, and finally cyst formation.

Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-13, 1956.
Submitted for publication Sept. 13, 1956.

7. A distorsão com nefropexia tem aliviado os pacientes portadores de torsão e ptose renais. Em alguns casos não há retorno da P.A. aos níveis normais porém a hipertensão será menos grave.

Em outros doentes a sintomatologia cerebral, ocular e cardíaca é influenciada com estabilização da P.A. em nível mais baixo quando se fixa o rim numa situação elevada.

RESUMEN

1. En un buen número de casos la hipertensión esencial es de origen renal.

2. En un Concienzudo examen del cuerpo del paciente jipertenso, un estudio completo del tracto urinario debe ser incluido.

3. La ptosis y torsion de el riñón deben ser incluidos entre el origen de las enfermedades renales, según esto puede causar hipertension ortostática renal.

4. En la investigación etiológica de la hipertension ortostática renal, la presion arterial debe ser tomada durante las actividades ordinarias y después de estricto reposo, en tal momento deberá ser de 30 a 40 mm. mas baja. Los pielogramas en posicion anteroposterior y lateral deberan ser tomados con el paciente en posición supina y erecta.

5. En la mayoría de los pacientes, la ptosis y torsion renal no producen síntomas, algunas veces sin embargo, la posicion erecta puede interderir con el abastecimiento sanguineo causa de estasicamiento debido a caida de la presion o torsion de los vasos renales, resultando así en hipertension ortostática.

6. Isquemia renal resultado de una disminución en el fluido sanguineo es producida por elongacion adelgazamiento, compresion o constriccion de el pediculo vascular.

7. Destorsion y nefropexia han ayudado a pacientes que sufren de hipertension ortostática debido a torsion y ptosis del riñon. En algunos, aunque la presion sanguinea no regresó a lo normal, la hipertensión fue menor severa. En otros los síntomas aminosados de cerebral, ocular y cardiaco fueran aminorados por la estabilización de la pression sanguinea a un nivel más bajo por finjacion del riñon en una posicion alta.

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The pathologist's diagnosis of biopsy specimens from this cyst was "material from a simple bone cyst." Space does not permit giving the full details of this report. A Gram stain of a smear from this cyst revealed no bacteria.

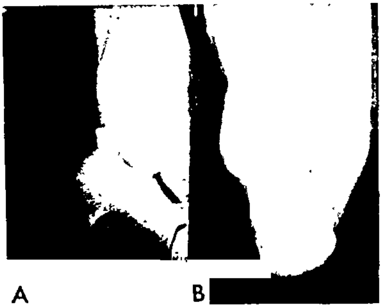

Fig. 6 (Case 6).—Roentgenogram (Sept. 22, 1944), showing solitary cyst of right os calcis.

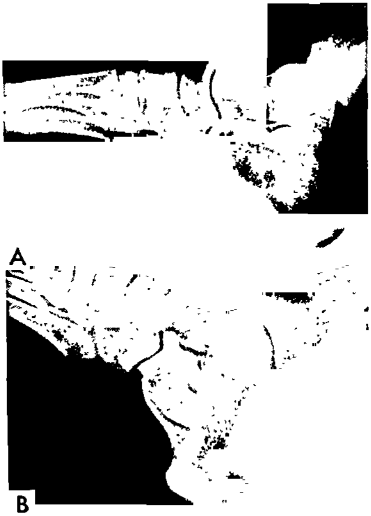

Fig. 7 (Case 7).—*A*, lateral view showing large rarefied area on anterior aspect of right os calcis, probably penetrating anterior aspect of plantar cortex of os calcis. *B*, roentgenogram taken four and one-half months after operation. Bone graft partially united.

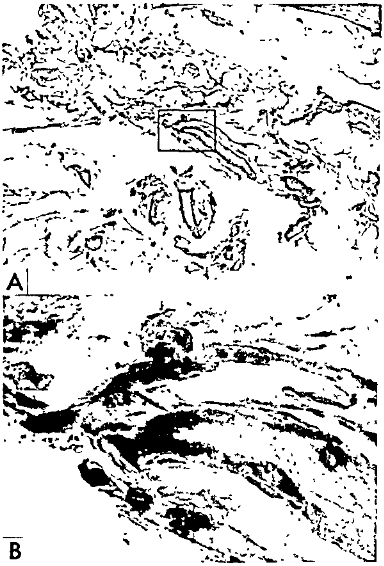

Fig. 8 (Case 7).—*A*, microscopic section of cyst material, low power (× 40). *B*, microscopic section of cyst material, high power (× 300).

In February 1945 the patient was discharged to full military duty, and no further complaints of pain in the foot or ankle have been reported to me.

In this case, part of the pain on weight bearing may have been caused by the cyst, although this was not proved and the complaints were probably due primarily to chronic sprain of the ankle.

As to the operation, a better procedure would probably be deeper curettement of the cyst wall and the use of cancellous bone grafts.

Case 7.—J. P., a 37-year-old white man, was seen by a colleague on Sept. 8, 1941, for pain and tenderness in the plantar area of the right heel, of three months' duration. The pain was worse on arising in the morning and was decreased by wearing shoes. The history revealed pain in both feet after the patient had jumped

Craniocerebral Injuries and the Postconcussion Syndrome

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SINCE my early association with the Los Angeles General Hospital, where I had occasion to treat over 20,000 patients with accidental injuries—the incidence of man-made injuries to the head has filled me with horror. As the miracle of our push-button mechanized civilization progresses, the incidence of preventable injuries to the head is increasing beyond belief.

The average person is not physiologically equipped with adequate corticospinal reflex response necessary for the operation of our modern, sensitive vehicles, especially under emergency circumstances.

Our superdeluxe, block-long pink and lavender racing cars, instead of being a source of comfort and pride, are actually potentially lethal weapons, comparable to pearl-handled machine guns. The result of this is 40,000 deaths and 1,000,000 disablements in the United States every year. It is well known that the death rate from accidental injuries during times of alleged peace exceeds, to appalling proportions, the death rate from modern catastrophic war.

The neurosurgeon's daily concern is with the critically injured patients. The survival of every such patient depends entirely on proper diagnosis and proper management; i.e., on the knowledge, the judgment and, above all, the conscience of the *first* doctor who is called to the bedside.

Who Shall Treat Craniocerebral Injuries? No two accidents ever produce exactly identical injuries; therefore, the physician who brings to the bedside of the unconscious patient a page from a textbook is inviting disaster.

One can train experts only by teaching students to observe and to think. The family physician can contribute much to the general metabolic state in the recovery period, and once the emergency is past the greatest thing that can be done for the general practitioner is to alert him to the danger signals.

A wise general practitioner is grateful when the neurosurgeon carries the responsibility at this stage. There are no rules, no mathematical calculations of symptoms that will add up to the diagnosis. This is a changing picture, and the surgeon must be ever receptive to the constantly changing messages transmitted to him by the patient. The unconscious patient communicates only with the expert.

Extensive and brilliant contributions have been made to the treatment and survival of the patient with a critically injured head. These include optimal management of the unconscious patient, the importance of good respiratory exchange, the proper balance of fluid, protein and electrolytes, the detection of associated visceral injury and the diagnosis of sur-

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[illegible] Congress of the United [illegible] College of Sur- [illegible] Sept. [illegible]

Estudios químicos de calcio fósforo y fosfatos alcalinos en sangre en estas series, cuando fueron hechos, dieron resultados esencialmente normales.

La biopsia reveló unicamente quiste simple y sirvió esencialmente para descartar otras lesiones.

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> I please myself with thinking that the method of teaching the art of healing is becoming every day more conformable to what reason and nature require; that the errors introduced by superstition and false philosophy are gradually retreating; and that medical knowledge, as well as all other dependent upon observation and experience, is continually increasing in the world. The present race of physicians are possessed of several most important rules of practice, utterly unknown to the ablest in former ages, not excepting Hippocrates himself, or even Aesculapius.
>
> —*Heberden*

to the structures of the neck,"[4] the only exception being penetrating gunshot wounds of the brain, especially with missiles of high velocity.[5]

In every case of accidental injury, when the head is involved in sudden acceleration or deceleration, some unnatural movement, rotation or strain has been suffered by the upper cervical spinal roots and muscles.[7]

The Role of the Upper Cervical Nerve Roots.—Mayfield described the "syndrome of the second cervical root" as a definite clinical entity. The second cervical root terminates at the great occipital nerve and supplies the major portion of the scalp, the upper part of the neck and portions of the face[1] (Fig. 1). Mayfield stated that the second cervical root is more vulnerable to trauma than other nerve roots because it is not protected posteriorly by pedicles and facets, which form the posterior half of the root canal elsewhere in the vertebral column.

The Role of the Spinal Accessory Nerve.—I should like to call attention to the anatomic aspects of the spinal accessory nerve. Except for 10 to 15 per cent, at most, the intracranial filaments take origin from the entire length of the cervical cord—always as low as the fifth and often as low as the seventh cervical level (Fig. 2).

Any acute flexion, extension or torsion of the neck will exert traction on the delicate filaments of the spinal accessory nerve, resulting in spasm of the trapezius and sternocleidomastoid muscles.

There are two additional factors in the production of pain from associated muscle spasm and cervical sprain. When the trapezius and the suboccipital muscles, including the splenius capitis and the semispinalis capitis, are in spasm, traction is produced on the great occipital nerve as it pierces the fascial attachment of these muscles. In addition, spasm of the oblique capitis inferior muscle (Fig. 3A) places additional traction on the great occipital nerve. It will be remembered that the second cervical root, after leaving the interspace between the first and the second cervical level, courses down and winds under the inferior border of the oblique inferior muscle before proceeding upward as the *great occipital nerve.*

Pains caused by disturbance of the second cervical root begin in the suboccipital area. They are often unilateral and may extend to the vertex, the temple, the forehead and the area behind the homolateral eye. Giddiness, unsteadiness and occasionally nausea may follow. Disturbance in focusing the eyes is complained of by some.

The cervical plexus originates from the second and third cervical and gives origin to the *great auricular nerve* and *the lesser occipital nerve,* as well as cutaneous twigs to the neck and the lower part of the face. Disturbance of the third as well as the second cervical nerve may give rise to pain over the temporal and mandibular areas.

Reichert[6] pointed out that, in addition to disturbing the upper cervical roots during neck sprain, the many muscles, together with their *paravertebral ligaments* and *fascial attachments,* are directly involved in the trauma producing muscle spasm. In his series of 78 patients with whiplash injuries, headache was the major complaint of 47.

Cervicotrigeminal and Occipital-Trigeminal Relations.—Many observers have noted sensory changes extending well over the trigeminal facial area after a whiplash injury of the neck. There are three explanations for this phenomenon:

1. *Extensive overlaps* from the upper cervical roots by way of the cervical plexus and cutaneous coli to the lower portions of the face.

2. Communications between branches of the cervical plexus (second and third cervical nerves) and the trigeminal nerves.

Segmentary pulmonary resection, whether wedge-shaped or atypical, was performed in 52 cases. The open edges resulting from the partial pulmonary resection were brought together by interrupted stitches of absorbable material.

Lobectomy was performed in 43 cases and pneumonectomy in 6.

In the series of *noninfected cysts,* lobectomy or pneumonectomy was reserved for multiple cysts or for cysts occupying an entire lobe or lung.

Marsupialization was preferred for large cysts, particularly those located in the inferior lobes.

Only 1 death was registered among the 148 cases of noninfected cysts, but in this case the condition was bilateral.

In the series of *infected cysts,* differentiation should be made between cases in which intrabronchial rupture had occurred and those in which intrapleural communication was present. The latter type was associated with extremely serious complications that urgently require pleural drainage. In the last case a pulmonary decorti-

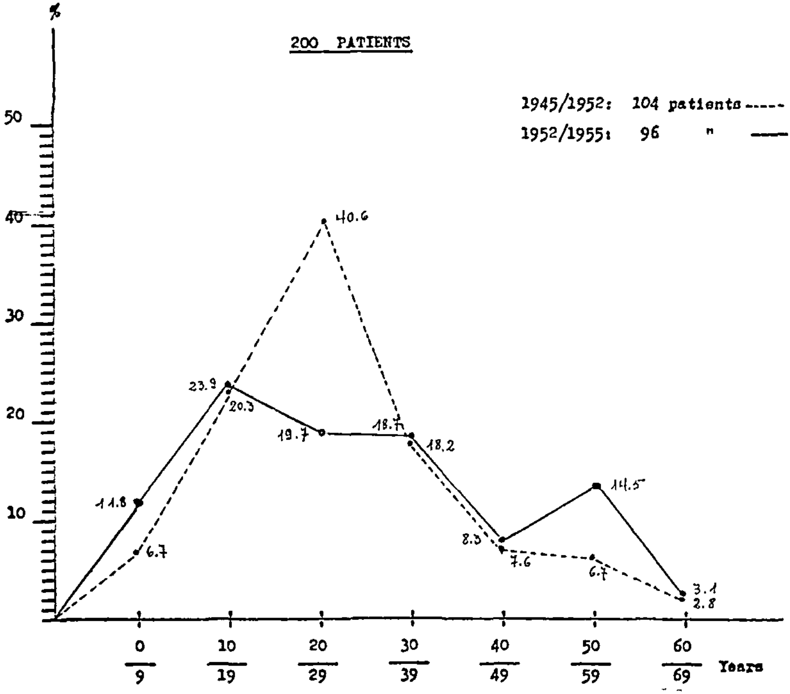

Fig. 1 (see text).

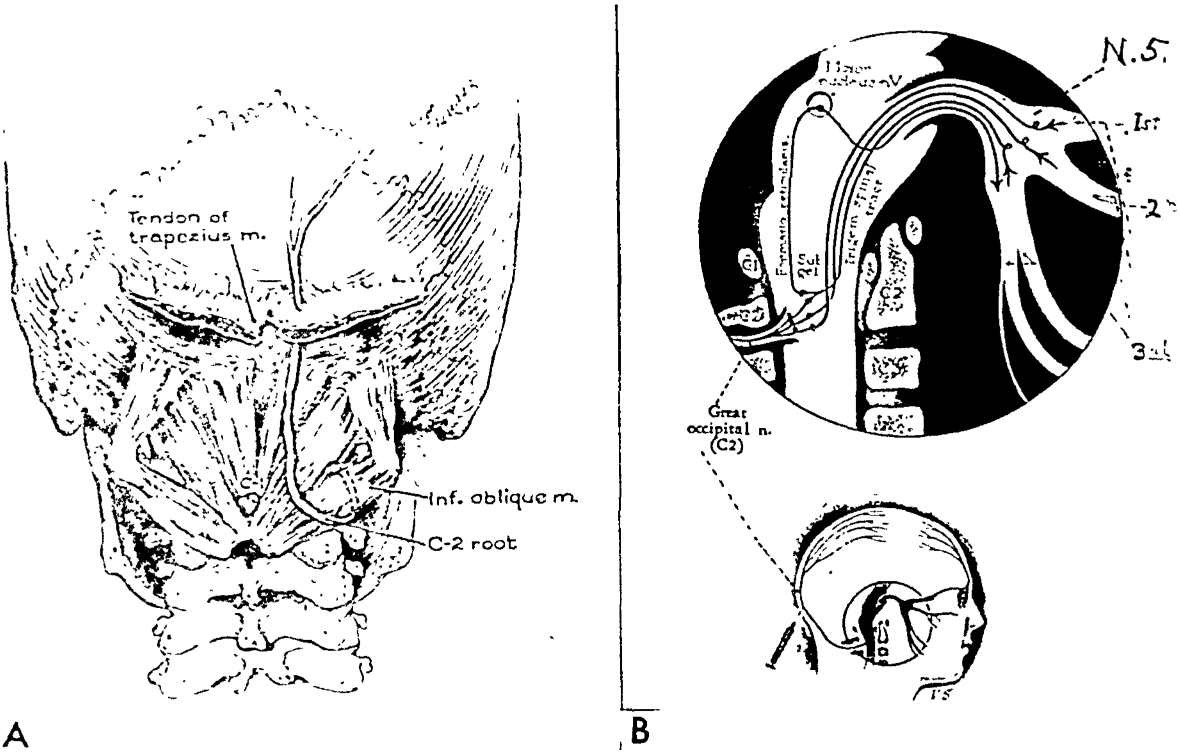

Fig. 3.—*A*, the second cervical root after leaving the C1-C2 interspace, courses down and winds under the inferior border of the oblique inferior muscle before proceeding upward (to pierce the occipital attachment of the trapezius muscle) as the great occipital nerve. *B*, synapse between great occipital nerve and trigeminal nerve. Skillern, P. G.: Great Occipital-Trigeminus Syndrome as Revealed by Induction Block, Arch. Neurol. & Psychiat. 72:335-340, 1954.

the occipital area to the vertex and to the frontal area as well. Often the pain will radiate behind the eye on the same side. Careful examination frequently discloses a minute palpable scar, pressure on which may initiate the entire migraine-like syndrome.

A 50-year-old woman was recently examined for severe migraine-like headache limited to the left side. Three years earlier a flatiron had fallen from a shelf immediately above her head and bruised the scalp near the vertex. She was not unconscious. The headaches began within two weeks after the injury. Neurologic, electroencephalographic and normal roentgen examination failed to reveal any abnormality. When the patient first appeared she had already undergone studies of the skull and had a pneumoencephalographic examination also with normal results. Palpation of the scalp revealed a slightly elevated scar, 5 mm. in diameter, at the vertex, just to the left of the midline (Fig. 4*A*). Palpation of this scar immediately produced severe hemicranial headache and pain behind the left eye. A small horseshoe incision was made about the scar. This totally abolished the pain.

Contusions over the supraorbital or the supratrochlear nerve or its branches are a common cause of frontal headache. A 17-year-old boy complained of attacks of left frontal headache of two years' duration following a cerebral concussion. Objective sensory changes were detectable by pinprick in the left frontal area, and palpation over a healed transverse scar above the left eyebrow produced severe frontal headaches (Fig. 4*B*). Procaine infiltration in this area abolished the headache.

The authors analyze the experience obtained at the Institute of Thoracic Surgery (Buenos Aires) in the treatment of 200 cases of hydatid cyst, in which 93 pulmonary resections, 81 marsupializations, 45 Posadas operations and 5 other procedures were done, according to the pathologic configuration of the cysts and conditions of the lungs.

The importance of pneumonitis and bronchiectasis secondary to chronic infected cysts is pointed out.

RESUMEN

Un breve resumen del diagnóstico y tratamiento quirúrgicos del quiste hidatídico del pulmón se presenta.

Los autores analizan la experiencia obtenida en el Instituto de Cirugía Torácica (Buenos Aires) en el tratamiento de 200 casos de quiste hidatídico en los cuales 93 resecciones pulmonares, 81 marsupializaciones, 45 operaciones de Posadas y 5 otros procedimientos fueron hechos, según la configuración patológica de los quistes y condiciones del pulmón.

RIASSUNTO

Viene presentato un breve studio sulla diagnosi e sulla cura chirurgica dell'idatidosi polmonare.

Viene riferita l'esperienza ottenuta all'Istituto di Chirurgia Toracica di Buenos Aires nella cura di 200 casi di echinococcosi polmonare: si fecero 93 resezioni del polmone, 81 marsupializzazioni, 45 operazioni di Posadas e 5 altri interventi, in rapporto alle caratteristiche anatomiche della cisti e a quelle del polmone.

SUMARIO

Apresenta um breve resumo do diagnóstico e tratamento cirúrgico do cisto hidático do pulmão. O A. analiza a experiência colhida no Instituto de Cirurgia Torácica (Buenos Aires) pelo tratamento de 200 casos de cisto hidático, nos quais, executou, 93 resecções pulmonares, 81 marsupializações, 45 operações de Posadas alem de 5 outros métodos, tudo de acordo com os aspectos patológicos dos cistos e com as condições pulmonares dos pacientes.

ZUSAMMENFASSUNG

Es wird ein kurzer Überblick über die Diagnose und die chirurgische Behandlung der Echinokokkuszyste der Lunge gegeben.

Die Verfasser erläutern ihre im Institut für Thoraxchirurgie (Buenos Aires) mit der Behandlung von 200 Fällen von Echinokokkuszysten gewonnenen Erfahrungen. Je nach der pathologischen Gestalt der Zysten und nach dem Zustand der Lunge wurden 93 Lungenresektionen, 81 Zysteneinnähungen, 45 Posadasche Operationen und 5 andere Eingriffe ausgeführt.

RÉSUMÉ

Un bref résumé du diagnostic et du traitement chirurgical du kyste hydatique du poumon est présenté.

L'auteur analyse les résultats obtenus à l'Institut de chirurgie thoracique de Buenos Aires, dans le traitement de 200 cas de kyste hydatique (avec 93 résections pulmonaires, 81 marsupialisations, 45 opérations de Posadas, et 5 autres techniques), selon les caractéristiques pathologiques des kystes et l'état pulmonaire.

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United States the death rate from accidental injuries, emphatically including those sustained in motor accidents, greatly exceeds the death rate during a catastrophic war.

Craniocerebral injuries should be referred to the neurosurgeon. Extensive and brilliant advances have been made in their treatment, and the patient should not be denied the full benefit of these. Exhaustive and highly complicated neurologic knowledge and outstanding neurosurgical skill are required for proper management of these traumatic conditions.

SUMARIO

O A. discute as lesões acidentais da cabeça em conjunto com a sindrome pósconcussão. Estabelece que, nos EE.UU. a mortalidade por lesões acidentais inclue principalmente as decorrentes de acidentes com veículos motorizados as quais excedem, grandemente, os índices de morte durante a guerra.

Diz que as lesões cranio-cerebrais devem ser enviadas ao neurocirurgião. Refere que amplos e brilhantes progressos tem sido conseguidos neste sectorde tratamento do qual não deve ser privado o paciente. Conhecimentos neurológicos, exaustivos e complexos assim como grande habilidade neuro-cirúrgica são necessários.

RESUMEN

El autor discute los traumatismos accidentales de la cabeza junto con el síndrome de postconcusión. Él señala que en los Estados Unidos el índice de mortalidad por traumatismos accidentales, incluyendo aquellos ocurridos en accidentes motorizados, excede grandemente al índice de mortalidad durante una querra catastrófica.

Los traumatismos craneocerebrales deben referirse al neurocirujano. Progresos extensos y brillantes se han hecho en su tratamiento, cuyos totales beneficios no deben negársele al paciente.

Se requieren un agotador y altamente complicado conocimiento neurológico y una sobresaliente habilidad neuroquirúrgica.

RIASSUNTO

L'autore considera le lesioni accidentali del capo e la sindrome post-commozionale. Mette in rilievo il fatto che negli Stati Uniti le cifre di mortalità dovute a lesioni accidentali, e sopratutto a incidenti di automobile, sono di gran lunga superiori a quelle che si riscontrano durante le guerre più cruente.

Le lesioni cranio-cerebrali devono essere curate da un neurochirurgo. Si sono fatti incredibili progressi in questo campo e i pazienti hanno il diritto di giovarsene. E' necessaria una completa conoscenza dei problemi neurologici e una perfetta tecnica neurochirurgica.

ZUSAMMENFASSUNG

Der Verfasser erörtert die Unfallsverletzungen des Kopfes gemeinsam mit dem Syndrom der Gehirnerschütterung. Er hebt hervor, dass in den Vereinigten Staaten die durch Unfallsverletzungen hervorgerufene Sterblichkeit, und dazu gehören ganz besonders die Folgen von Automobilunfällen, bei weitem die aus einem katastrophalen Kriege resultierende Mortalitätsquote überschreitet.

Die Behandlung von Verletzungen des Kopfes und des Gehirns sollte dem Nervenchirurgen überlassen werden. Diese Spezialität hat umfangreiche und glänzende Fortschritte aufzuweisen, deren Segnungen dem Kranken voll nutzbar gemacht werden sollten. In solchen Fällen ist eine erschöpfende Kenntnis auf dem komplizierten Gebiet der Neurologie und eine ungewöhnliche neurochirurgische Geschicklichkeit erforderlich.

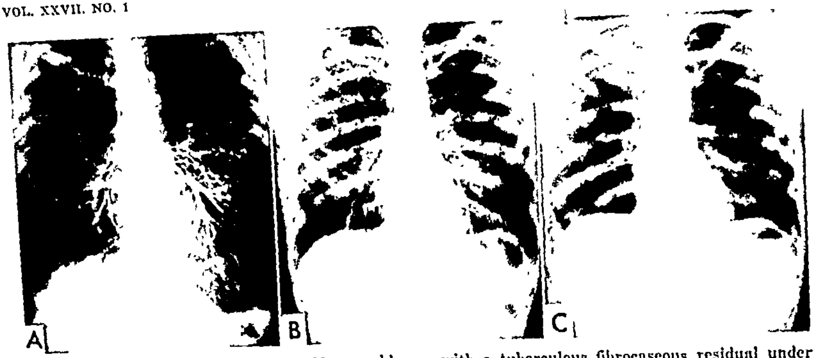

Fig. 1.—*A*, bronchogram of T. G., a 20-year-old man with a tuberculous fibrocaseous residual under the right clavicle. Aqueous dionosil in right bronchi and lipiodol in left. Peripheral filling to terminal bronchi is somewhat better with aqueous dionosil, which tends to coat bronchi rather than pool in them. *B*, film taken two hours later, showing clearing of the media but with alveolar filling in left lung by lipiodol. *C*, six weeks after segmental resection of right upper lobe. "Contrast medium infiltrate" of lipiodol in left lung could readily be confused with contralateral spread of tuberculosis.

tails of any progressive lesion.

The search for a new type of contrast material led to the development of water-soluble media that are rapidly absorbed after intratracheal instillation. Morales and Heiwinkel,[24] in 1948, used 35 per cent diotrast in 2.5 per cent carboxymethylcellulose as the first of such media. Subsequently, Atwell[25] performed bronchographic studies with this preparation, encountering no serious reactions.

Several other water-soluble compounds became available, some of which had iodo pyracet (diodrast) as the contrast medium. Others used urokon in the same manner. The vehicle common to all these media is some form of methylcellulose, a synthetic carbohydrate of high molecular weight. The viscosity of the medium used may be altered by adding varying amounts of the carbohydrate. When the contrast material is of sufficient concentration to produce sharp contrast and the medium is at a desirable viscosity, however, it is hypertonic. Clinically, the water-soluble media have proved irritating, owing to this hypertonicity,[26] which makes satisfactory anesthesia difficult to achieve.

Some studies have shown methylcellulose to be nontoxic to tissues.[27] Other reports[28] indicate that a cellulose synthetic, though nontoxic, acts as a foreign body in the alveoli and bronchi, causing foreign body granulomas and fibrosis. Even small masses could be observed in surgical specimens. Although this perhaps has no great significance in the relatively normal lung, it may be quite deleterious to the already damaged lung.

Although initial studies were promising, in 1953 Peck[29] reported 2 sudden deaths after the use of these water-soluble compounds. One patient, who had been tested for sensitivity, died after bronchographic examination with the diodrast preparation. The other death occurred during the use of urokon in methylcellulose. The patient in this case had not been tested for sensitivity in advance.

During 1953, Tomich, Basil and Davis[30] of England investigated the behavior of a third type of bronchographic medium. This was a suspension, either aqueous or oily, of the n-propyl ester of 3:5- DI-IODI

Tumors of the Brain

A Report on Two Hundred and Eighty-Eight Autopsies

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A REVIEW of operative deaths over a period of more than twenty-five years in any field of surgery is interesting, but a review of operative deaths in a highly specialized field, such as neurologic surgery, over the same period should be most enlightening, particularly in the face of the rapid progress of neurologic surgery in the past quarter century. Advances in any special field of medicine are enhanced far more by studying one's failures than one's successes, and the value of the autopsy cannot be too forcefully stressed. This report of autopsy observations includes data on deaths occurring in the operating room, to and including autopsies performed on patients as long as seventeen years after operation.

In spite of the physical aids now available for diagnosis and localization of intracranial neoplasms, it is still extremely important to obtain a careful history. Complete neurologic, ophthalmoscopic and roentgenographic examinations should be carried out before selected laboratory and special diagnostic examinations are utilized. Only by a carefully elicited history, and a meticulous general examination can one distinguish between co-existing diseases and the early symptoms of increased intracranial pressure, which may be associated with an expanding intracranial lesion, regardless of its location. Contrariwise, it must be remembered that many
ple, those situated in the sella turcica, the chiasmal region and the cerebellopontine angle — may and frequently do give rise to localized symptoms before symptoms of increased intracranial pressure are manifested.

It is evident, therefore, that the symptoms of brain tumor vary according to the origin, site, rate of growth, size and pathologic features of the neoplasm. Most tumors of the intracranial cavity produce a chain of symptoms peculiar to their own life cycle. The necessity of a carefully elicited history and a complete neurologic examination is obvious. Most tumors in adults occur above the tentorium. The pronounced exception is perineural fibroblastoma of the eighth nerve. In children, most brain tumors occur in the cerebellum. The outstanding exceptions are Rathke's pouch cysts and craniopharyngioma.

The special diagnostic examinations and laboratory tests will be enumerated briefly in this presentation, with special emphasis on one procedure that has been most helpful in the treatment of malignant tumors of the brain, particularly the metastatic type.

Special diagnostic aids available and of assistance are here listed:

1. *Roentgenographic Studies of the Skull.*—These reveal convolutional markings in the calvarium, if present; destruction of the clinoid processes; ballooning of the sella turcica; erosion of the bone, e.g., the petrous bone; calcium deposits in a neoplasm or a vascular lesion; abnormal separation of sutures, and the shift of a calcified pineal gland.

stration of the bronchi. Evaluation of subsequent films always showed marked filling of the alveoli with lipiodol, but not with the other agents.

The sharpness of the contrast is definitely superior with lipiodol, and this can be obtained with less material. We usually required 15 cc. of dionosil per side to obtain satisfactory visualization, as compared to approximately 10 cc. per side for lipiodol. None the less, the dionosils do afford very satisfactory contrast to demonstrate endobronchial pathologic change. Here again the oily dionosil appears superior to the aqueous. With aqueous dionosil the sharpness of contrast tends to disappear so rapidly that the interval between injection and the roentgen exposure should not be greater than ten minutes. Roentgenograms of the chest taken subsequent to the obtaining of bronchograms revealed complete clearance of the dionosils in nearly all cases within three days and in all cases within five days. Lipiodol was always discernible for as long as a month after injection, often for six months, and in one case for two years.

No deaths or serious complications due to any of the agents occurred in this series. In more than 300 bronchograms (including those of the present study) taken with various media in patients with tuberculosis, no undue effect of the tuberculous lesion has ever been noted. The only significant complication occurred in a patient who had been given aqueous dionosil, early in this series, before careful attention was being paid to removing as much of the medium as possible. Shortly after completion of the bronchograms the patient became dyspneic and cyanotic. Bronchoscopic examination revealed the dionosil to be caked along the entire tracheobronchial tree. Large quantities of this were aspirated, with partial clearing of the symptoms, but it was several hours before the patient was completely normal clinically.

SUMMARY AND CONCLUSIONS

1. A comparative study has been made of the relative merits of lipiodol, aqueous dionosil and oily dionosil for bronchographic studies.

2. Lipiodol appears to be extremely satisfactory except that persistent infiltrates of the medium remain in the lungs for extended periods, obscuring the details of progressive lesions.

3. Aqueous dionosil was relatively unsatisfactory, as it proved irritating and gave the poorest contrast of the three media studied.

4. Oily dionosil proved quite satisfactory, giving excellent bronchograms almost on a par with those obtained with lipiodol, being nonirritating and quickly disappearing from the lung parenchyma.

ZUSAMMENFASSUNG UND SCHLUSSFOLGERUNGEN

Es liegt eine vergleichende Untersuchung der Vorzüge von Lipiodol, wässerigem Dionosil und öligem Dionosil in der Bronchiographie vor.

Das Lipiodol erwies sich als ein zufriedenstellendes Mittel mit der Ausnahme, dass es hartnäckige die Lunge infiltrierende Reste für längere Zeiträume hinterliess, wodurch die feinen Einzelheiten eines fortschreitenden Krankheitsprozesses verdeckt wurden.

Das wässerige Dionosil war verhältnismässig unbefriedigend, weil es Reizerscheinungen hervorrief und von geringerer Kontraststärke als die beiden anderen Mittel war.

Das ölige Dionosil führte zu recht befriedigenden Resultaten und produzierte ausgezeichnete Bronchiogramme, die den mit Lipiodol erzielten fast gleichkamen. Es war reizlos und verschwand nach zer Zeit aus dem Lungengewebe.

y frios; tibial anterior y pedia izq. no laten; indice oscilométrico disminuido, especialmente el izqdo.; termometría muy disminuida, especialmente izq. con elemento espamódico presente muy atenuado; hipertrofia ventricular izquierda; lesiones de fondo de ojo grado 2.

En estos dos casos encontramos un síntoma de primerísima importancia en el diagnóstico diferencial entre la Tromboangiitis obliterativa y la Arterioesclerosis obliterativa, cual es la presencia de lesiones esclerosas retinianas, constantes en esta última, y ausentes en general, en la primera. Ahora bien, Sanchez, como si dudara él mismo del diagnóstico, que sinembargo consigna como hecho en Panamá y ratificado en Nueva York, asienta en letras mayúsculas: "Fondo de ojo: Arterioesclerosis Incipiente"; Perez Carreño, a su vez señala que su caso, estuvo hospitalizado en otro Servicio quirúrgico, con diagnóstico de Hipertensión esencial y arteriopatía de tipo Leo Buerger: cuando ingresa a su Servicio, un año después, ya intervenido de toraco-simpaticectomía bilateral y esplancnicectomía, tiene 41 años de edad, Mx 190 y mn 85, hemiplegia izquierda, hipertrofia ventricular izquierda, Keith-Wagner 2 en fondo de ojo: ¿No es cierto que este cuadro evoca mas bien el diagnóstico de arterioesclerosis que el de tromboangiitis?

Sinembargo, a pesar de la importancia que atribuimos al fondo de ojo para el diagnóstico no nos atrevemos a pronunciarnos definitivamente sobre ello, en el primer caso por la autoridad de los medios científicos donde fué dictado el diagnóstico, y en el segundo por estar de por medio la talla científica del antiguo Interno del Hospital Vargas del primero de nosotros, y Profesor de Clínica Quirúrgica del segundo, e indiscutiblemente uno de los cirujanos venezolanos de mas amplia ilustración y experiencia en lo relativo al campo de las arteriopatías.

Desde el punto de vista exclusivamente clínico, Silbert trae el siguiente cuadro para el diagnóstico diferencial entre arterioesclerosis y tromboangiitis.

Nosotros hemos elaborado para nuestras clases de Clínica Quirúrgica, extrayéndolo de lo expuesto por Wright en su Manual of Vascular Diseases in Clinical Practice, el siguiente cuadro:

Tromboangiitis:	*Arterioesclerosis:*
Aparenta menos edad	Aparenta mas edad
Color del cabello normal	Color del cabello generalmente gris
No hay arcos seniles	Frecuentemente presentes
Arterias retinianas normales	Generalmente escleróticas
Presión arterial generalmente baja	*Presión a menudo alta*
Arterias radial y temporal suaves	Radial y temporal gruesas y duras
Extremidades superiores frecuentemente complicadas	Extremidades superiores rara vez complicadas
Arterias gemorales frecuentemente complicadas	Femorales rara vez obstruidas
No hay calcificación de los vasos a los Rayos X	Calcificación de los vasos frecuente
Volúmen de la sangre generalmente disminuido	Volúmen de la sangre generalmente normal
Síntomas de arterioesclerosis coronaria raros	Síntomas de arterioesclerosis coronaria frecuentes
Aorta aparece normal a los Rayos X	Aorta algunas veces alargada
Albuminuria rara	Albuminuria es común
Historia de flebitis migratoria frecuente	Historia de flebitis migratoria rara

Con tantos elementos a que atender se comprende que no pueda propugnarse un tratamiento único y sistematizado para todos los casos de tromboangiitis: como quiera que éllo sea, la realidad es que con los modernos tratamientos se ha logrado reducir la rata de amputaciones que antiguamente alcanzaba mas del 70% hasta menos del 5%.

Sintomáticamente, *como* dice Leriche, toda la enfermedad está dominada por el espasmo, contra el cual, afortunadamente, estamos bien armados y que podemos combatir por los medios siguientes:

a) por la *arteriectomía*, cuyo carácter dominante de intervención vaso-dilatadora la hace similar a la gangliectomía, cuyos resultados buenos o mediocres, comparte;

b) por la *gangliectomía lumbar*, la cual, cuando la circulación periférica está todavía asegurada por la replesión a contra-corriente de la via principal mas allá de la obliteración, da resultados notables, pudiendo hablarse de curación durante años, y a veces definitivamente. Pero aún así, esta intervención no ataca la condición etiológica, y la enfermedad es capaz de reiniciar su evolución, despues de una larga, aparente detención. La operación de Diez cura los síntomas, no cura la enfermedad. (Leriche)

c) por la *adrenalectomía*, única intervención que ha dado resultados completos y duraderos (15, 16 años), hasta el punto de que en opinión de Leriche, se podría hablar de curación definitiva, sin nuevos brotes evolutivos ni nueva localización del mal. Pero, desgraciadamente, la operación de von Oppel no asegura ni mucho menos de manera absoluta la detención de la enfermedad; ora, porque practicada demasiado tarde, cuando existen ya trombosis que evolucionan por su propia cuenta; ora porque se ejecuta una intervención insuficiente, no extirpándose sino una glándula o sea la mitad del tejido endocrínico responsable o bien porque la glándula restante se hipertrofie y adquiera una mayor actividad. Estos hechos son fundamento de quienes opinan que en la base etiológica de la tromboangiitis es necesario tomar en consideración un desequilibrio endocrínico suprarrenal. Para obviar una posible hipertrofia de la suprarrenal restante, hay quienes aconsejan la sección de los esplancnicos.

Desde el punto de vista anatómico y fisiológico, no es fácil la supresión del trastorno circulatorio: un arteriectomizado, un simpaticectomizado lumbar, un adrenalectomizado, aun cuando reaparezcan las oscilaciones, aun cuando la temperatura cutánea vuelva a la normal, permanece en las mismas condiciones de un arterítico obstruido: con objeto de remediar esta situación, Reynaldo dos Santos resucitó, *hace ya mucho años, la primitiva idea de* Leriche, *de reemplazar el segmento arterial* trombosado por un injerto venoso; ignoro hasta que punto se han proseguido las experiencias de dos Santos h., quien logró el funcionamiento correcto de injertos venosos en perros; posteriormente se han practicado injertos arteriales (Leriche, Fontaine, etc.).

Mas tarde, se pensó por un momento que la solución estaba en la "endarteriectomia desobliterante" de Bazy y Réboul, modificación de la primitiva técnica de la endarteriectomia de dos Santos h., la cual consiste en la extirpación, a cielo abierto de la endoarteria y el trombo en un solo bloque, con lo cual se ha logrado, en muchos casos, repermeabilizar los vasos trombosados, a veces definitivamente; pero aparte de que los resultados finales de esta intervención no son mejores que los de la arteriectomia, sus dificultades técnicas y

necessity for circumvention, prevention and adequate therapy of acute edema of the lungs. If the same progress could be made in the treatment of this complication as has been made with pneumonia, the operative mortality rate would be strikingly diminished.

CONCLUSION

It is evident from the information listed that the proper handling and treatment of complications attending tumors of the brain, since the recent marked advance in surgical acumen, must be devoted primarily to treatment of acute edema of the lungs. This can best be accomplished by establishing and maintaining the fluid and electrolytic balance. Water intoxication and an unrecognized depletion of sodium are effectively combated by administration of isotonic or concentrated solutions of sodium chloride. In spite of the discouraging results with pontine tumors, continued attack on this type of lesion should be encouraged.

CONCLUSIONS

Depuis les récents grands progrès de la chirurgie il ressort de toutes les observations que le traitement des complications accompagnant les tumeurs cérébrales, doit être dédié en premier lieu à l'oedème pulmonaire aigu. Le mieux est d'établir et de maintenir l'équilibre des liquides et l'équilibre électrolytique. Une intoxication hydrique et une déperdition de sodium sont efficacement combattues par l'administration d'un isotonique ou d'une solution concentrée de chlorure de sodium. Malgré les résultats décourageants obtenus jusqu'ici dans les cas de tumeur du pont de Varole nous devons nous attacher à poursuivre nos efforts dans ce domaine.

SCHLUSSFOLGERUNGEN

Aus den in der Arbeit dargelegten Erfahrungen geht hervor, dass seit die chirurgischen Kenntnisse erhebliche neue Fortschritte aufzuweisen haben, die Behandlung der Komplikationen von Hirntumoren sich in erster Linie dem akuten Lungenödem zu widmen hat. Dies geschieht am besten durch Herstellung und Erhaltung der Flüssigkeits- und Elektrolytenbilanz. Die Wasserintoxikation und eine unerkannte Natriumverarmung werden durch Verabreichung isotonischer oder konzentrierter Kochsalzlösungen wirksam gekämpft. Trotz der entmutigenden Ergebnisse der chirurgischen Behandlung von Brückentumoren sollte die Fortsetzung der Angriffe auf diese Art der Erkrankung nicht aufgegeben werden.

CONCLUSOES

Acentua que o planejamento a tratamento das complicações dos tumores cerebrais, considerando-se os recentes progressos da cirurgia, devem ser inicialmente dedicados ao tratamento do edema agudo dos pulmões. Esse objetivo pode ser melhor atingido pelo estabebecimento e manutenção do equilibrio hidro-eletrolítico.

CONCLUSION

Es evidente por nuestra información que el manejo y tratamiento de complicaciones de tumores cerebrales, desde el marcado avance reciente de el acumen quirúrgico, debe dirigirse primariamente a tratar el edema agudo del pulmon. Esto puede lograrse mejor estavlesiendo y manteniendo el balance fluido y electrolítico. La intoxicacion por agua una desconocida depleción de sodio son efectivamente convatidas por la administración de soluciones isotónicas o concentradas de cloruro de sodio. No obstanto los resultados desalentadores con los tumores pontinos, ataques continuados hacéa ese tipo de lesión deben recomendarse.

zona de la piel sana (Fig. 1, *A* y *B*).

En la cara plantar correspondiente a la misma zona hay una ulceración de un cm. de profundidad que rezuma un líquido oscuro, espeso, mal oliente. Piel fria y sudorosa (sic).

La arteria femoral late bien; la poplitea, tibial anterior y pedia, no laten; las arterias del miembro izquierdo laten normalmente. Oscilómetria: ver fig. 2 (oscilómetro de Collens). Termometria: ver fig. 3 (Dermalor Tycos).

Cosasesco negativo; replesión venosa de Collens, fuertemente positiva.—El ángulo de suficiencia circulatoria y el tiempo y distancia de claudicación no pudieron investigarse debido al intesndo dolor del enefermo.—Rubor de declive, aumentado.

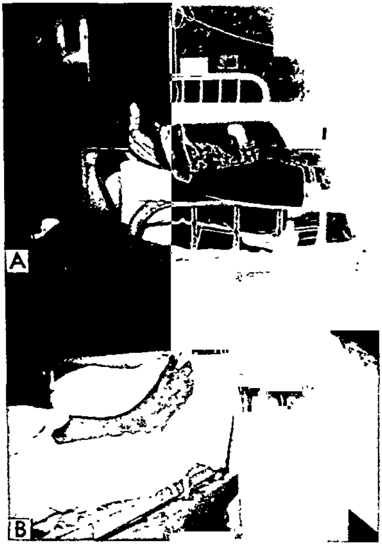

Fig. 1.—*A*, fotografia del pie del paciente (cara dorsal) al entrar al Servico. *B*, fotografia del pie (cara plantar) en la misma época.

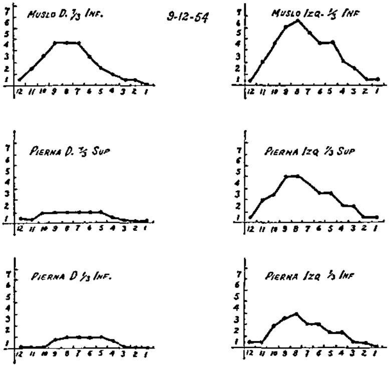

Fig. 2.—Curvas oscilométricas (Collens) al ingresar el paciente.

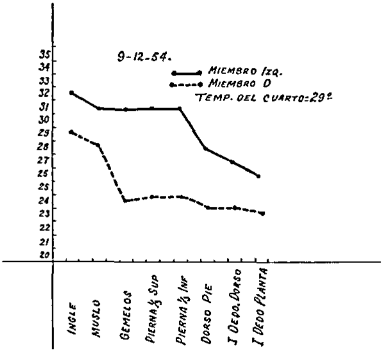

Fig. 3.—Curvas termométricas (Dermalor) en la misma época.

Exámenes de laboratorio: Kahn: 0; Glicemia: 1,08;—Urea: 0,50;—CRG: 3.860.-000;—Hgbl.: 78%;—CBG: 32.000;—Indice de Katz: 30;—Hemograma de Shilling: N 86%;—T. sangria: 2'15"; T. coagulación: 5';—Tiempo protrombina 16";—Orinas: normal;—Heces: O—Radioscopia broncopulmonar: normal.—Exámen de fondo de ojo: normal.

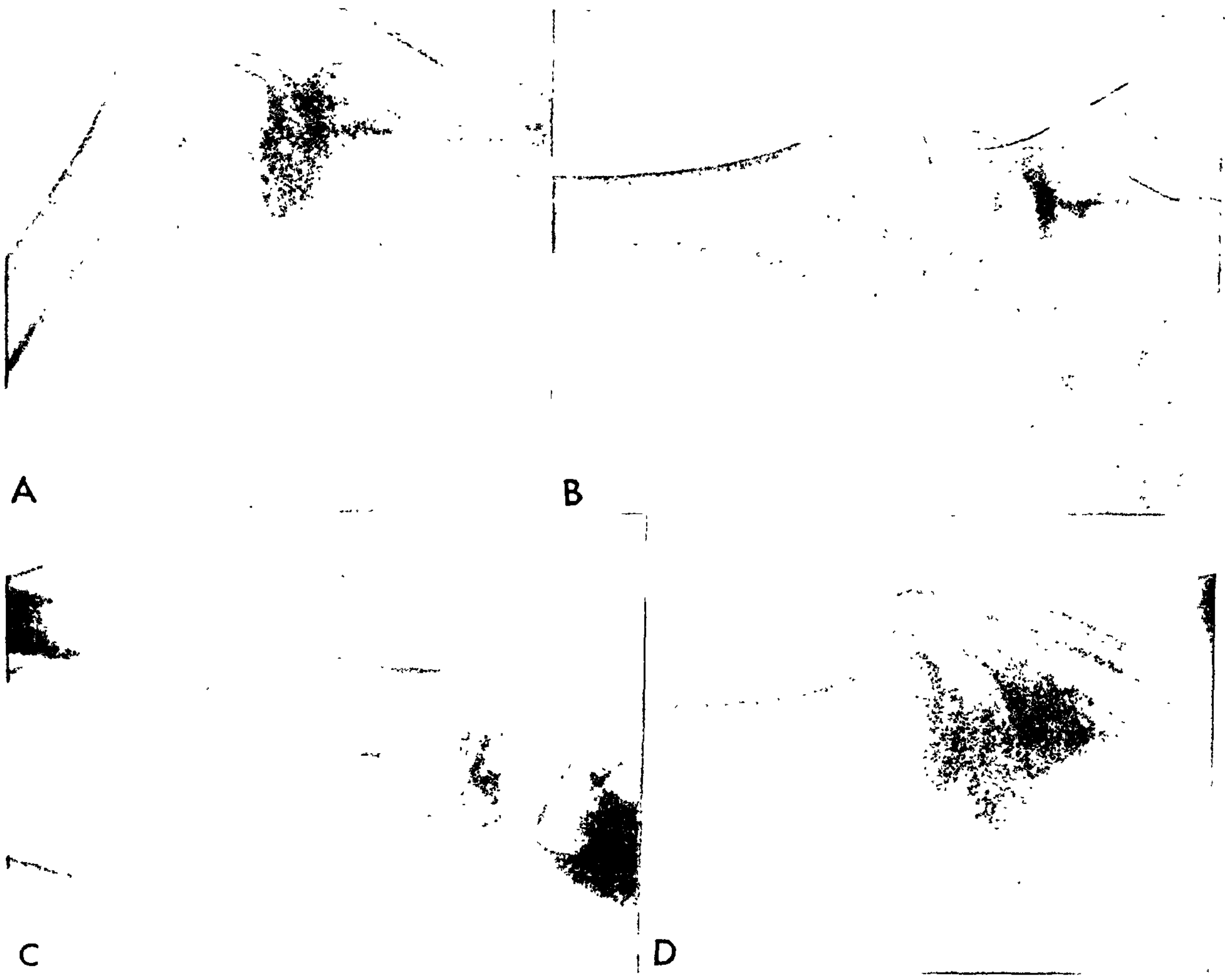

Fig. 1.—*A*, roentgenogram illustrating the type of injury under discussion. M. G., an engineer and shipbuilder, aged 32, fell off a horse on Feb. 8, 1942, injuring his left shoulder. The film shows a severe fracture-dislocation of the extracapsular type, with considerable comminution of the proximal fragment. The head was dislocated anteriorly in the infracoracoid position, and the shaft was pulled upward to about an inch and a half of shortening. *B*, film taken shortly after reduction with cast in position, showing that the dislocation has been reduced. The fracture fragments are in good anatomic alignment, and the shoulder is held in 80 degrees of abduction in fixed traction by the technic here described. Note increased joint space and capsular stretch. *C*, film taken in the vertical plane, showing good contact between the fracture fragments, with the head of the humerus in proper contact with the glenoid. Soft tissue structures under tension act as an internal splint. *D*, film taken eight weeks after the operation, showing fracture lines obliterated by callus formation, with minimal angulation at the fracture site. Circulation of the humeral head is intact. Further roentgen studies are not available, but when last examined, nine years after the injury, the patient had regained almost complete function in the shoulder joint, without deformity or muscle atrophy. He was entirely without pain and was able to make free use of the left arm in his work as a shipbuilder.

difficulties encountered can be described as twofold: failure to reduce the fracture-dislocation and/or failure to maintain reduction. It is my contention that, if adequate reduction is obtained without subsequent displacement, the incidence of aseptic necrosis and poor end results will be considerably diminished (Fig. 1, *A* to *D*). In order to achieve this end, one must apply the maximum degree of traction that the upper extremity can tolerate. This is accomplished by positioning the patient on a fracture table that permits traction on the upper extremity — preferably the Albee-Comper table (Fig. 2*A*). The shoulder is gently abducted to 90 degrees

RESUMEN

Se discute el lugar de la *arteriectomia* en el tratamiento de la enfermedad de Winiwarter-Buerger, puntualizando sus beneficios, derivados de la supresión delos reflejos arterio-arteriales patológicos vasoconstrictores, lo cual provoca una mejoria de la circulación del miembro; se pondera la ventaja de la posibilidad de practicar el exámen anatomo-patológico que daría el diagnóstico preciso.

Se hacen notar los buenos resultados obtenidos por la combinación de la operación de Leriche con la administración de vacuna ani-tifoidea, segun las normas de Wright, y Allen y as.

Se propone, por via de estudio, el tratamiento sistemático de la enfermedad de Winiwarter-Buerger, con la siguiente escala ascendente:

1) arteriectomia y exámen histo-patológico.
2) vacuna anti-tifoidea, ganglioplégicos, infiltración novocaínica, tratamiento sintomático.
3) operación de Diez (gangliectomia lumbar).
4) operación de von Oppel (adrenalectomia).
5) excepcionalmente, amputación.

RÉSUMÉ

Les auteurs discutent le lieu de l'*artériectomie* dans le traitement de la maladie de Buerger, insistant sur ses avantages qui dépendent de la suppression des réflexes vasoconstricteurs artério-artériels, ce que améliore la circulation du membre. Ils mettent en évidence les avantages de l'examen pathologique qui permet un diagnostic définitif.

Les bons résultats obtenus en combinant l'opération de Leriche avec l'administration de vaccin typhoidique comme le conseillent Wright et d'autres auteurs, sont soulignés.

Il est proposé de traiter expérimentalement la maladie de Buerger dans la progression suivante:

1. Artériectomie et examen pathologique.
2. Utilisation du vaccin typhoidique, de ganglioplégiques, d'infiltrations ganglionnaires à la novocaïne, et traitment symptomatique.
3. Opération de Diez (sympathectomie lombaire).
4. Opération de von Oppel (suprarénalectomie).
5. Exceptionnellement, amputation.

RIASSUNTO

Viene discussa l'importanza dell'arteriectomia nella cura del morbo di Buerger, quale metodo sapace di sopprimere i riflessi vasocostrittori vaso-vasali con conseguente miglioramente del circolo dell'arto.

Vengono ricordati anche i buoni risultati ottenuti combinando l'operazione di Leriche con la somministrazione di vaccino tifoide, come suggerito da Wright.

Si propone il seguente schema di cura:

1. Arteriectomia ed esame del pezzo.
2. Impiego del vaccino tifoide, di ganglioplegici, di procaina per infiltrazioni lombari.
3. Opération de Diez (sympathectomie lombare).
4. Opération de von Oppel (suprarénatomia).
5. Exceptionnellement, amputation.

ZUSAMMENFASSUNG

Die Verfasser erörtern die Stellung der *Arterienresektion* in der Behandlung der Winiwarter-Bürgerschen Krankheit und heben den Nutzen der Operation hervor, der auf der Unterdrückung der pathologischen vasokonstriktorischen artero-arteriellen Reflexe beruht. Dies verbessert den Blutkreislauf in der Gliedmasse. Die

Fig. 5 (*opposite*)—*A*, patient R. M., aged 40, male. Left shoulder injured by diving off a high board with arm abducted when he struck the water. Roentgenogram shows a comminuted fracture through the surgical neck, complete rotation of the humeral head and anterior dislocation of the shoulder joint. *B*, film taken in the operating room with left humerus in fixed traction. Brachial anesthesia was used but did not secure sufficient muscular relaxation for reduction of the head. *C*, film taken in operating room, with limit of traction applied, after further manipulation with patient under general anesthesia. Note that adequate room has been provided for return of humeral head to shoulder joint. *D*, traction partially released to permit contact between proximal and distal fragment and cast applied. Joint space is still increased, however, and capsule is under maximum stretch. Stretching of capsule that is obtained in the procedure appears to facilitate later return of function. *E*, film taken sixteen days after injury. Patient returned to his home three days after injury; four days later his physician observed partial palsy of the ulnar nerve. He considered this due to injury by the Steinman pin through the olecranon and accordingly removed the pin and the spica cast and applied a hanging cast. Film *E*, taken sixteen days after the injury, shows beginning displacement of fracture after removal of spica cast. *F*, film taken five weeks after reduction with hanging cast treatment. Note overriding of fragments and subluxation of shoulder joint. *G*, appearance two years later. I have been advised that patient has a serviceable shoulder but shows residual signs of partial palsy of the ulnar nerve. In this connection, it might be noted that injury to the ulnar nerve was not evident three days after the injury, so that it is reasonable to assume that the nerve was injured by insufficient padding in the plaster cast at the elbow. When the Steinman pin is inserted through the medial side of the olecranon, there is little likelihood of direct nerve damage.

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the pin and slipping of the loops off the pin when traction is applied. The telescoping traction bar and gear are adjusted to allow for maximum uptake later, and the shoulder is stabilized by a few turns of the lever.

The most potent factor in securing reduction is provision for proper countertraction. To accomplish this, the opposite extremity is secured to the other traction bar with the shoulder abducted to 90 degrees and the elbow fully extended (Fig. 2*B*). A muslin bandage engages the wrist joint in a clove hitch knot and the two ends are secured to the footpiece, after which sufficient traction to overcome the sag of the extremity is applied. The degree of traction is gradually increased on the injured side until the soft tissue structures are taut. When extreme traction is attained the Steinman pin will bend, but the surgeon may continue turning the lever cautiously until the limit of tolerance is reached. Attention is then directed to the head of the humerus. Direct manual thrust is applied by the closed fist or fingers of one hand, while the surgeon's other hand grasps the upper humeral shaft and gently oscillates the arm. In some cases reduction will be heralded by a sudden loud snap. If this is not forthcoming, the position of the head may be ascertained by palpation, and, if it is deemed to be satisfactory, roentgen studies in two planes are obtained by means of a portable roentgen machine in the operating room. Further manipulation may be necessary to improve the degree of reduction or rotation of the head, and its direction will be guided by the roentgen appearance. The upper and lower fragments are firmly grasped, one in each hand, and forcefully angulated upward, then outward; this usually suffices to effect anatomic alignment. If additional roentgenograms show distraction of the fracture, traction may be gently decreased to permit good contact. A thick felt pad is applied to the thoracic wall in the axillary line, and a well-fitting shoulder spica is molded in position, incorporating the bone pin at the elbow (Fig. 3, *A* and *B*). The patient is returned to bed and may be ambulatory on the following day. Postreduction roentgenograms are taken and rechecked once a week for three weeks. The upper shell of the arm cast and the Steinman pin are removed in the fifth week, and active exercises are begun in the sixth. The cast may be discarded several days later, although the use of a sling and a large axillary pad may be necessary before the transition to neutral position is reached.

ly remarked, there is little profit in trying to achieve peaceful coexistence with a man-eating tiger.

As every acquaintance of the College is aware, the position taken in our *Credo* applies to oppressors only, not to their victims. Those who suffer the onslaughts of catastrophe, whether in the course of nature or imposed by the barbarous inhumanity that still exists in humankind are invariably our first consideration. When the people of the Netherlands were overwhelmed by floods, great numbers being left homeless and helpless, we sent some aid immediately. We have participated actively in the sending of CARE packages to many parts ever since this avenue of help was opened. Our sense of the tragic need of the world for aid and understanding, always acute, has been further heightened by the agonizing bulletins still coming in from Hungary. Long before Dr. Kline's letter arrived, the College had acted; a special meeting of the Board of Governors had been called, and an immediate grant in aid of one thousand dollars had been cabled to our colleagues, Drs. Mandl, Schönbauer and Kline and their co-workers, who are indeed "tearing themselves apart" in the effort to alleviate the sufferings of those who thought freedom worth bleeding and dying for. One need not be an American to share this principle, for it is universal, thank God; an inheritance of the Divine that exists in every human soul and, once allowed to rear its head, cannot be destroyed. Those who gave their consent to the Nazis, those who countenanced and still countenance the Communist regime, those who have adhered and catered to despotism through every age of human history, have done so for two reasons only: ignorance and fear.

Fear does strange things to the heart and mind of man. Were it not for fear, it would be incredible that any human being, much less a whole population, could remain in ignorant obedience to tyranny, with the evidence plain before him and the stench of infamy in his nostrils all day long. But add fear—desperate fear, fear for one's life and one's loved ones, fear not only of death but of slow death by torture, physical, mental and spiritual, and this ignorance becomes comprehensible. Why? Because *fear, grown great enough, leaves no room in man's mind for perception of anything else.*

All tyrants and would-be tyrants, from the petty blackmailer in civilian life to the dictator whose lust for power makes him regard his murdered victims as just so much dead meat, are well aware of this fact. If they were not, they could not retain their power as long as they do. They know that if they let in one ray of light there will be revolt, and once that has happened all is lost. Suppose, for example, that the Russians succeed—and they have not yet done so—in quelling the Hungarian rebels altogether. How long will it last? History supplies the answer. A new generation of Hungarians has caught its first glimpse of freedom and found it good. Eventually, therefore, and inevitably, unless man succeeds in destroying man altogether, *Hungary will be free.* Nor will she stand alone, for the stark heroism of her unequal struggle has intoxicated the world. The other Iron Curtain countries are seething with it, as the situation in Poland proves. The Soviet must look to its fences, and build them of stronger barbed wire than ever before, or there will soon be trouble on the home front also. The Russians are human too, as their ridding themselves of the Tsarist yoke has demonstrated. Let them once understand how abysmally they have been fooled, and there will be little more to dread from that direction.

It is this hope—this certainty, rather, if history is to be believed—that has led the College to give its official approval to to the shoulder joint.

5. Omission of the olecranon bone pin, with constriction of the circulation when the elbow joint did not remain in a fixed position in the cast.

6. The use of manipulation and a hanging cast in a borderline case, with complete displacement two weeks later. The patient returned to his home in another city for further treatment.

There were 6 cases of complete extracapsular dislocation. Good results were obtained in 3 and failures in 3 as listed. In the remaining 5 intracapsular dislocation was present, with anterior and rotational dislocation as high as 80 degrees. Comminution of the humeral head fracture was usually seen. End results were consistently better in the second half of the series, after the technic was standardized (Fig. 7, *A*, *B* and *C*).

Precautions.—1. Immediate reduction is advisable. If a fracture table is not available, a makeshift table can be devised by suspending the patient on a narrow board between two tables and applying traction with a block and tackle to the bone pin, the wrist being held above, with the elbow in flexed position, by the assistant. Countertraction to the opposite arm is secured by a loop of bandage fastened to an immovable fixture in the operating room, such as a radiator, window handle or water pipe.

2. In positioning the patient on a fracture table, a narrow spinal bar is fitted to the table so that the spica cast may be applied after reduction.

3. The fracture table selected must have facilities for traction on the upper extremity. The Albee-Compere table is provided with an adjustable compression strut interposed between the traction bar and the supporting framework of the table to prevent adduction of the shoulder as traction is increased. The manufacturer fails, however, to provide a second strut for the opposite extremity, so that an additional strut must be ordered. If this is lacking, the opposite traction bar can be immobilized by tying it to a rigid fixture in the operating room as aforedescribed (Fig. 2*B*).

4. General anesthesia is essential for proper muscular relaxation. In 1 case brachial plexus block was administered initially, but reduction was not possible until general inhalation anesthesia was given (Fig. 5*B*).

5. Caution should be exercised in the insertion of the bone pin to prevent injury of the ulnar nerve; sufficient padding should be applied to the skin overlying the nerve.

6. Manual traction or traction with adhesive tape cannot adequately replace pin traction. In 2 early cases in which this was tried the elbow joint slid upward in the cast, with resultant pain and constriction of circulation.

7. Countertraction is ineffectual if attempted by fixing the chest against a curved bar attached to the table or by the aid of an assistant who pulls away from the operating surgeon with a towel around the chest. These measures do not hold the scapula and glenoid in the fixed position that is essential before sufficient space is created for reposition of the humeral head by traction on the injured shoulder.

8. A thick felt pad must be used to protect the thoracic wall, which is the fixed point of countertraction during convalescence in the cast.

9. Release of traction before sufficient callus forms will result in redisplacement of the fragments (Fig. 5*F*). A minimum of five weeks of uninterrupted fixed traction is required.

COMMENT

The results heretofore obtained in treating fracture-dislocation of the shoulder

Neurological Nursing. By John Marshall Sr., Springfield Ill.: Charles C Thomas, Publisher, 1956. Pp. 166, with 83 illustrations.

This monograph is written for the neurologic and neurosurgical nurse but will be of great value to resident physicians on neurologic or neurosurgical services and will be of interest to neurologists, neurosurgeons, physiotherapists and social workers connected with the care of neurologic patients. It is concise, well written and illustrated. American readers will be impressed by the apparent responsibility of nurses in the British Isles for procedures that in this country are usually reserved for physicians. All technical procedures are described in detail, and the book is well illustrated with diagrams and photographs. In illustrations showing the posturing of the prone patient, however, no provision is shown for support of the head, although other details are meticulously illustrated and described.

The care of the unconscious patient and the skin and bladder of the paraplegic patient are especially well covered. Perhaps one of the best features of the work is the emphasis on the proper psychic approach to patients with neurologic disease and the repeated illustrations of the value of proper attitude and approach on the part of the nurse, as well as the scope of the role she may play in the education of the patient.

This book is well worth reading for everyone concerned with the care of the neurologic or neurosurgical patient.

HAROLD C. VORIS, M.D.

The Dental Treatment of Maxillo-Facial Injuries. By William Kelsey Frya and Terence Ward. Springfield, Ill.: Charles C Thomas, Publisher, 1956. 2d ed. Pp. 372, with 383 illustrations.

This book is the second edition, appearing after an original printing in 1942 and a revised edition in 1945. Therefore, it is more complete in many areas such as antibiotics, treatment of complications and the use of bone grafts. Although not voluminous, under 400 pages, the authors have covered the entire field of oral surgery and maxillo-facial injuries. The book is concerned primarily with traumatic conditions and includes chapters such as "pathology of bone repair," and "loss of tissue." It is well written and contains adequate photographs, pictures and diagrams. The book is indexed but does not have a bibliography.

ARNO LESHIN, M.D.

Dermatology. By Donald M. Pillsbury, Walter B. Shelley, and Albert M. Kligman. Philadelphia: The W. B. Saunders Company, 1956.

This is a complete, up-to-the-minute text by three outstanding practitioners from a leading training center for dermatologists. The authors are distinguished investigators in cutaneous medicine, which may account for the volume's vital, dynamic flavor. This notable book marks a new era in dermatologic texts with its iconoclastic attitude toward many outworn shibboleths. The result is fresh and moving. There is no padding with discarded theories and therapy, though this is a large work and fully authoritative. Basic throughout is a broad, fundamental biologic approach. This signifies a platform for easy understanding by general practitioner and specialist. Yet the book is a complete and adequate reference for the experienced dermatologist. The latter may miss listings of pertinent literature; for others this omission makes for easier, uninterrupted reading. Several chapters by contributing authorities are valuable. The printing, binding and other physical aspects help to make the book a distinguished text for biologist, the general physician and the specialist.

THEODORE CORNBLEET, M.D.

reduce the incidence of aseptic necrosis of the humeral head by permitting maximum contact with the medullary blood supply from the distal fragment. The unreduced anatomic head of the humerus is almost completely deprived of arterial blood supply. Further, if the need for open reduction in many cases is obviated, potential sources of blood supply from soft tissue attachments to the proximal bone fragments are conserved. Open reduction is often complicated by extensive calcification of the shoulder capsule and ligaments (Fig. 6*B*). Increased efficiency of closed procedures will minimize the frequency of this occurrence.

Many surgeons resort to excision of the head of the humerus in the initial stages of treatment rather than subject the patient to a lengthy convalescence, terminated by degeneration of the humeral head. Partial resection of a major joint must be considered a drastic procedure and should be withheld until all other available methods have failed. This is especially applicable in the case of young adults or the middle-aged. Replacement of the excised head fragments with an artificial prosthesis offers interesting possibilities for rehabilitation; restoration of anatomic structures by physiologic healing, however, should be the goal toward which the surgeon strives. Badgley[15] commented: "Experience in the past thirty-five years or more in bone and joint surgery has convinced me of the inability of any foreign material to take the place of bone for any length of time."

Replacement of the humeral head by a prosthesis should be reserved for shoulders with advanced degenerative or destructive lesions.

The fixed traction method is useful in the handling of difficult fractures of the surgical neck of the humerus and fracture-separations of the proximal humeral epiphysis. In reporting 43 cases of the latter type of injury, Smith wrote: "In patients under fifteen with marked displacement, should we keep them comfortable and let nature correct the deformity or should we try to find a more satisfactory type of internal fixation?" Since the problem of obtaining reduction in such cases is similar to that encountered in cases of fracture-dislocation, I would urge the employment of fixed shoulder traction. The method is also helpful in certain reconstructive procedures of the shoulder, such as arthrodesis and bone graft replacement of the proximal portion of the humerus when this has been destroyed by neoplasm.

SUMMARY

A revised technic for the closed reduction of fracture-dislocation of the shoulder is described and illustrated by roentgen studies and photographs taken in the operating room. The method of maintaining the corrected position during the convalescent period is shown. Precautions to be taken by the surgeon for the proper execution of the procedure and the pitfalls to be avoided are outlined.

ZUSAMMENFASSUNG

Es wird eine verbesserte Technik der geschlossenen Reduktion von Verrenkungsbrüchen der Schulter beschrieben. Das Verfahren wird an Hand von im Operationssaal angefertigten Röntgenbildern und Photographien erläutert. Es wird gezeigt, auf welche Weise die erzielte Stellung des Gelenks in der Zeit der Rekonvaleszenz erhalten werden kann. Die vom Chirurgen zu beachtenden Vorsichtsmassnahmen bei richtiger Ausführung des Verfahrens und gewisse Tücken der Methode, denen man ausweichen muss, werden umrissen.

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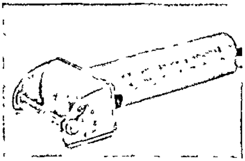

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The Prosthetic Team and the Child Amputee

ROBERT MAZET JR., M.D., AND MILO B. BROOKS, M.D.

LOS ANGELES, CALIFORNIA

THE prosthetic team has been devised in order to make the best use of the surgical and technologic advances in amputation surgery and prosthetics developed during and after World War II. It is now realized that the surgeon's responsibility to the amputee embraces more than *performance of a technical procedure.* Prior to operation, the surgeon must prepare the patient mentally as well as physically for his ordeal. He must help the patient face his loss with maximum equanimity. With the aid of the prosthetic team, he must make certain that the patient obtains the artificial limb most useful to him, learns to use it with the maximal efficiency and regains his place in society as soon as possible. The patient, the surgeon, the limb fitter and the amputee trainer comprise the basic prosthetic team. Augmentation of the team by the engineer, the psychiatrist, the social service worker and the employment counselor[1] will frequently increase its effectiveness (see diagram).

When the amputee is a child, the prosthetic team is even more important. It must include one or both parents or other relatives, the pediatrician and ideally the child's teacher. Improved devices now permit the fitting of many more children with functioning artificial arms and legs than was formerly possible. Fitting without training, and training without acceptance by the patient, his family and his contemporaries are futile.[2]

The pioneer work of the juvenile training center of the Michigan Crippled Children's Commission[3] has shown that children can be successfully fitted at a much earlier age than was formerly deemed practicable. They (and we) are now fitting selected amputees (both upper and lower extremity) during the first year of life.

The Child Amputee Prosthetic Program at the University of California, Los Angeles,* is conducted jointly by the Medical School and the College of Engineering. The Medical School is responsible for diagnosis and treatment of the medical problems of each patient. The Prosthetic Laboratory of the College of Engineering is concerned with the development and fabrication of prostheses, including special devices that may be indicated for the individual patient. Within the Medical School the departments of orthopedics, pediatrics, psychiatry, physiology, physical medicine and social service participate in the project. Aid is requested from other specialties when needed. Children are "worked up" first by pediatricians. They and their parents are then interviewed by the social service worker and the psychologist. The purpose and operation of the program is explained to them by the project administrator. The patient is examined by the prosthetist, if the problem presents any complication, and is introduced to the trainer. Not until these steps have been completed does the patient appear at the amputation conference.

At this meeting the orthopedic surgeon, the pediatrician, the engineer, the psychologist, the amputee trainer, the prosthetist

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From the Departments of Surgery (Orthopedics) and Pediatrics, University of California Medical Center, Los Angeles. Read at the Twenty-[illegible] Annual Congress of the United States and Canadian Section, International College of Surgeons, Chicago, Sept. [illegible]

Submitted for publication Sept. [illegible]

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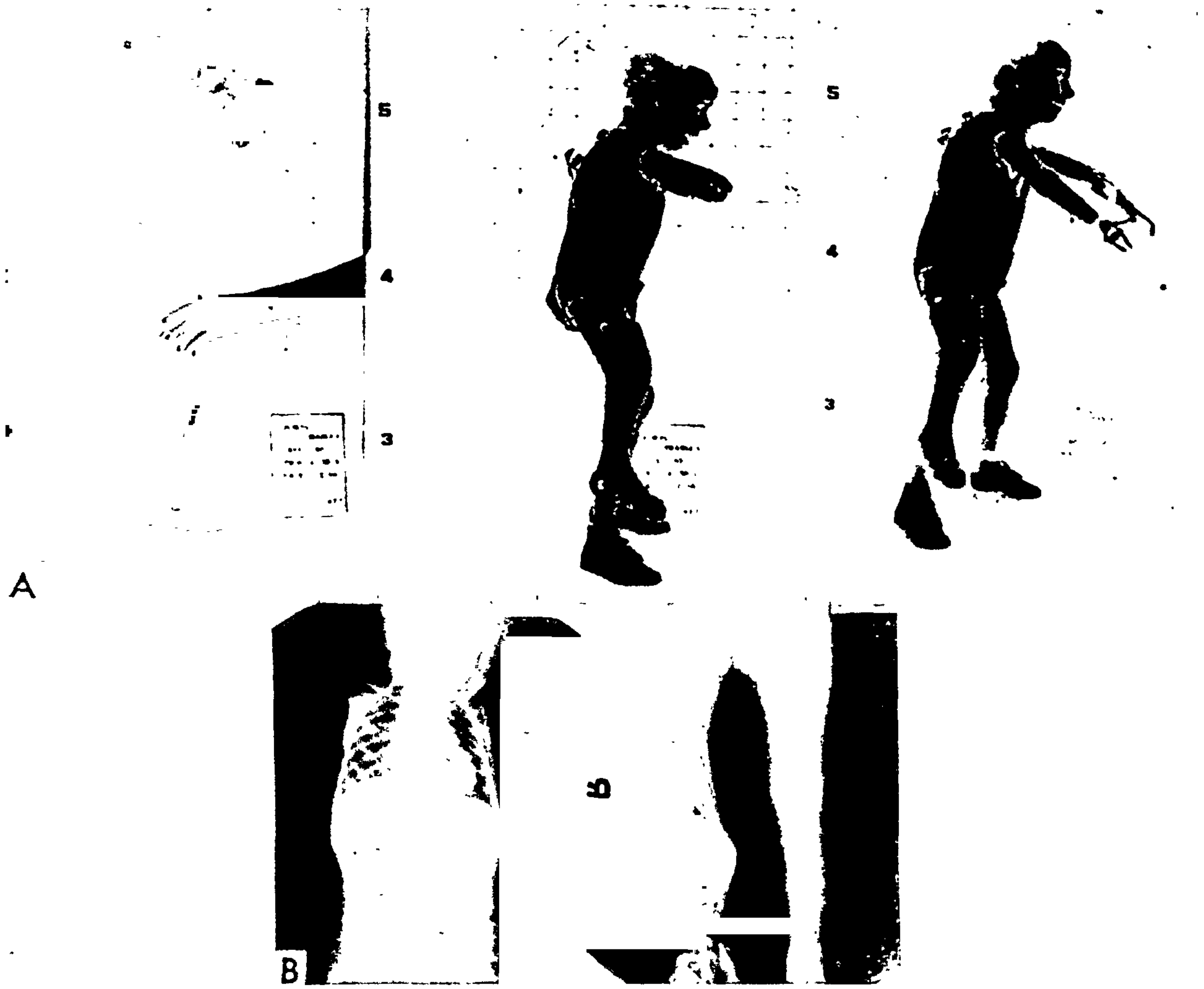

Fig. 1.—*Above, left,* absence of upper extremities and deformed short right lower extremity. *Below,* roentgenogram showing absence of upper extremities, scoliosis, dysplasia of right hip, short bowed femur, absence of fibula and maldevelopment of foot. *Above, center,* plastic extension prosthesis for right lower extremity and pylon type device with shoulder cap, passive shoulder motion, and no terminal devices for the upper extremities. *Above, right,* passive shoulder and elbow joints for upper extremities. The right terminal device is a hook, the left an infant passive hand.

to rid the patient of a useless part that perhaps requires an unsightly, misshapen socket, may be irritated by the wearing of a prosthesis or may interfere with function. One should, however, maintain a conservative approach to operation. As a rule it is better not to remove the anomalous part until the patient requests the operation. One should preserve epiphyses and joint function at operation whenever possible. We have not advised cineplasty before the age of 15 unless some very unusual condition exists.

There is one particular type of deformity—it may be either uncomplicated or complicated—with which experience has recently taught us to restrain our enthusiasm and adopt a more cautious approach. This is the bilateral type in which the level of amputation is near the shoulder joint or in which the deformed extremities are short and have limited function.

The prosthetic tolerance of such people does not permit fitting them with prostheses of the bilateral shoulder disarticulation or the short above-elbow type. It is not girl or two now and then, but otherwise my three assistants and I are trying to handle thousands daily where before we were hard put to handle two or three hundred. Also, the flame is spreading, and while there is no revolt in other Iron Curtain countries neighboring Austria, word has leaked in to them about Hungary and Poland, and other nationalities are streaming into Austria in much larger numbers. They, too, must be cared for—one man is the same as another and nationality means nothing in the great need for help. We generally work from 8:30 A.M. to 10:30 P.M. or sometimes until midnight, when we simply can not write another letter or read another paper. Saturdays and Sundays are no exception. Last Friday I began at 8:30, had a little lunch, then worked straight through until Saturday 2:00 P.M., took a bath, put on slacks, rushed over to the Consulate and packed kit bags, lifted huge boxes, swept away rubbish, etc., etc., etc., until 7:30 that night.

"Went to dinner, found that I couldn't stand up, was put to bed! This isn't a very cheerful letter, is it? Actually, it isn't put half as badly as things really are. You would have to see the refugees to believe it. Now back to the grind. So much to do. I think I'll sneak out for a bite of lunch (almost four o'clock—hadn't realized it) so I can keep at this work. No good if I collapse too, is it? However, I've always been quite a workhorse and feel sure nothing will happen to me. We're praying that the story of jaundice and polio in Hungary is only a rumor, but I'm afraid it isn't. This will mean that more people will come flooding into Austria to escape these plagues, and it may mean spreading both of them here and into the countries to which we send these escapees. Fortunately, the winter will help us somewhat on this score—or so we think. And so we hope.

"Time to go. Many thanks for your offer. It will not be forgotten and will be used if the time comes, when we handle people this way. Meanwhile, your understanding and your sympathy are appreciated — Heaven knows these people can use large doses of both. Keep well and happy yourself, and I promise that here we will do everything we can."

Such a letter would call for no comment whatever were it not for the fact that one comment cannot be made too often—that which emphasizes, over and over again, the inestimable value of freedom to all mankind. Life is all but worthless without it, as man instinctively knows, though too often he does not realize how infinitely precious it is until he has lost it. In every human heart, as the New Year begins, is the hope that peace and independence lie ahead for the Hungarians and the people of all other captive nations. At the same time, let us recommend to ourselves, and to others in our fortunate and blessed condition, that we guard this priceless treasure now and forever. Once lost, the price of its repossession is high.

Postgraduate Course on Surgery of the Hand at Nanterre given under the auspices of the International College of Surgeons

Dr. Marc Iselin announces that registration is open for the Eighth Course on Surgery of the Hand, to be given September 16-22, 1957, at Maison Départementale de Nanterre, 403, Avenue de la République, Nanterre, Paris (Seine), France. The Sixth Course, meeting from September 24 to September 29, 1956, was attended by twenty-four surgeons, representing eight countries. Application for the Seventh Course, which will convene April 29-May 4, 1957, is already closed.

e character and qualification of its rank d file; not more in the advanced learning its leaders, than in the prompt uni- rmity with which scientific discoveries nd clinical observations become common roperty, and thus available to the suffer- g sick wherever found.

"An aristocracy assumes that there is ore wisdom and patriotism in the judg- ents of a few than in the heads and earts of the many, but in medicine there re no lords nor house of lords, no mon- rchies nor monasteries, no dignitaries nor iplomats, no caste, unsupported by char- cter, but every man at once to be, a ervant and a king!"[6]

Note: I have shamelessly appropriated ideas and phrases from (1) an article by Amos Koontz, in the July 1956 issue of the *Maryland State Medical Journal,* (2) an address by Umphrey Lee, then President of Southern Methodist University, before the Southern Medical Association, (3) an oration by Professor Gladys Fashena at the graduating exercises of Southwestern Medical School of the University of Texas, (4) a column in the *Dallas Morning News* by The Reverend John F. Anderson Jr., (5) a presidential address before the Southern Surgical Association by Edwin Lehman of Richmond and (6) another presidential address by Charles M. Rosser, delivered to the Medical Association of the Southwest in 1907.]

RESOLUTION ADOPTED BY THE EXECUTIVE COUNCIL, UNITED STATES SECTION

International College of Surgeons

November 17, 1956

WHEREAS numerous authorities in med- cal and automotive research have gone on ecord with the results of tests and statistical tudies, indicating that safety belts in auto- nobiles will save thousands of lives and pre- ent or minimize more thousands of injuries, nd

WHEREAS the American Association of Motor Vehicle Administrators has recom- nended in convention that various States and anadian Provinces, undertaking the regula- ion of standards for seat belts, base their requirements on the practices recommended by the Society of Automotive Engineers for omplete seat belt assemblies, and

WHEREAS the recent adoption of these recommendations and standards by the nation's motor vehicle commissioners will now encourage testing for adequate strength and reliability of all belts manufactured and sold to protect passengers of vehicles from death in the event of accident, and

WHEREAS we believe that present activities to prevent accidents by education, law enforcement and traffic engineering — which have served so well to reduce the rate of traffic deaths and injuries — must continue, and

WHEREAS we also recognize that great progress in the prevention of injury can also be made in the near future by the nationwide use of seat belts and possibly by other methods that will in many instances completely avoid or moderate injuries to the occupants of vehicles, despite the seemingly inevitable and increasing frequency of accidental crashes,

NOW, THEREFORE, BE IT RESOLVED that the International College of Surgeons place itself on record as encouraging continued research into technics for the prevention or moderation of injuries and education of the public to utilize the proven and most practical means of reducing deaths and injuries despite accidents.

As surgeons, who see the tragic results of auto accidents at first hand, we believe there is much to be gained by the use of safety belts and the application of automotive designing that will lessen or prevent accidents.

When in Chicago, visit the Hall of Fame and the School of the History of Surgery and Related Sciences of the International College of Surgeons at 1516-1524 Lake Shore Drive, Chicago 10, Illinois.

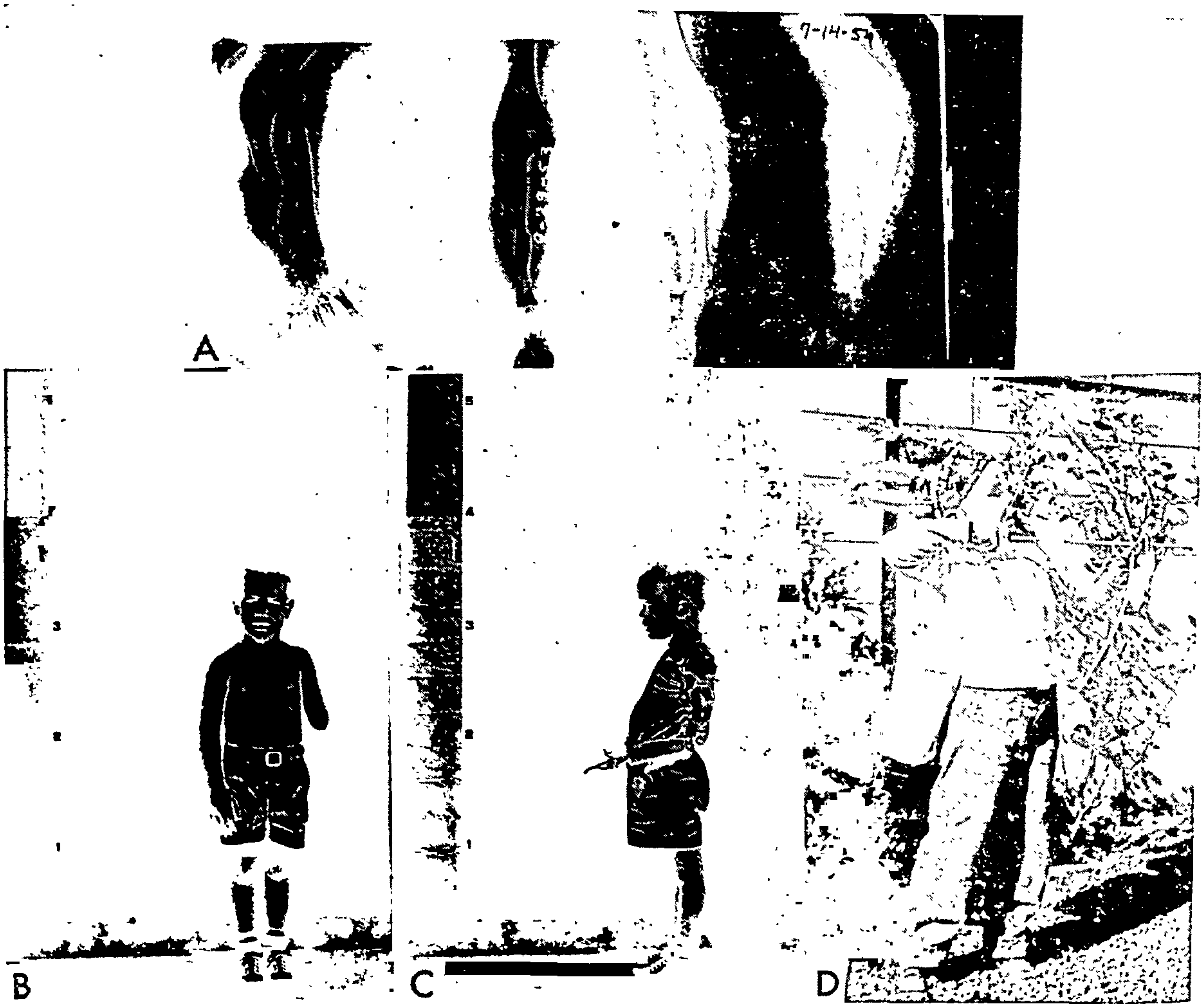

Fig. 4.—*A*, preoperative roentgenograms showing large tumor of left forearm with destruction of lower part of ulna and pressure necrosis of mid part of radius. *B*, disarticulation of left elbow. *C*, prosthesis for disarticulation with outside locking elbow joint. *D*, patient at archery practice.

tion; an infant passive hand was therefore substituted. He obtained good push-pull function from this until he outgrew the prosthesis, eight months after his initial visit. At the age of 33 months the spur on the bifid left humerus was removed and the webbed fingers of the right hand separated. At 37 months there was surprisingly good flexion and abduction of the left shoulder (90 degrees). A new prosthesis with a passive friction elbow lock was prescribed. A small hook will be used, as it is our opinion that he will now be able to operate it.

This is an instance in which the early fitting of special prostheses in a complicated case was helpful. At the time of the initial fitting the child was too young to operate a hook. The passive hand was more nearly physiologic. He will need continued training for a considerable period. We anticipate the development of helpful function in the left arm. Two minor surgical procedures proved beneficial; others may be necessary to improve the function of the left shoulder and the right hand. *In this case also the engineer* and the basic prosthetic team all contributed to the result.

CASE 6.—N. B., 14-year-old boy, a self-reliant, uncommunicative Indian football, baseball and basketball player, tore off a considerable portion of his left hand by an accidental shot-

The time of the Congress is so near at and that persons planning to attend are rgently reminded to register immediately. he Congress will meet at the height of the exican tourist season, when accommodaions, unless made in advance, are exceedngly difficult to get. The International ravel Services have reserved blocks of ooms in a number of the finest hotels or surgeons and their families. These are rapidly filling up. Undue delays in announcing your intention to attend may create difficulties and disappointments for late registrants.

Communicate your desire of attendance, hotel reservations, registration and itineraries to International Travel Service, the official travel representatives of the College. The Palmer House, 119 South State Street, Chicago, Illinois.

Combine Business with Pleasure During Your Stay in Mexico

The Tenth International Congress of the International College of Surgeons, which will convene in Mexico City on Feb. 24-28, 1957, has aroused tremendous interest among the surgeons of the United States, Canada, and Central and South Americas. Several hundred representatives of the surgical profession will convene in the historic Mexican capital—The Rome of the Americas—to exchange their experiences and observations.

International Travel Service, Inc., the official travel representative for the International College, have planned and arranged attractive tours before and after the convention. February and March being the best months for a winter vacation and the most pleasant time of the year in Mexico, almost all members who have indicated their intention of attending are planning to take advantage of this unique opportunity of combining scientific learning with relaxing activities. The travel programs which have proved most popular among those contemplating attendance at this meeting are those that extend from nine to fourteen days.

Incomparable Acapulco and charming Taxco top the list of places that will be visited, but many doctors have expressed their preferences to visit such less known, but no less fascinating, places as Tehuacan, Fortin, Patzcuaro and San José Purua. The demand for first class hotels has been great. It is therefore essential that you make your reservations without further delay unless you are prepared to face the disappointment of not being able to carry out the trip you have been planning. At this eleventh hour, do not delay making your arrangements. Write immediately to International Travel Service, Inc., The Palmer House, 119 South State Street, Chicago 3, Illinois.

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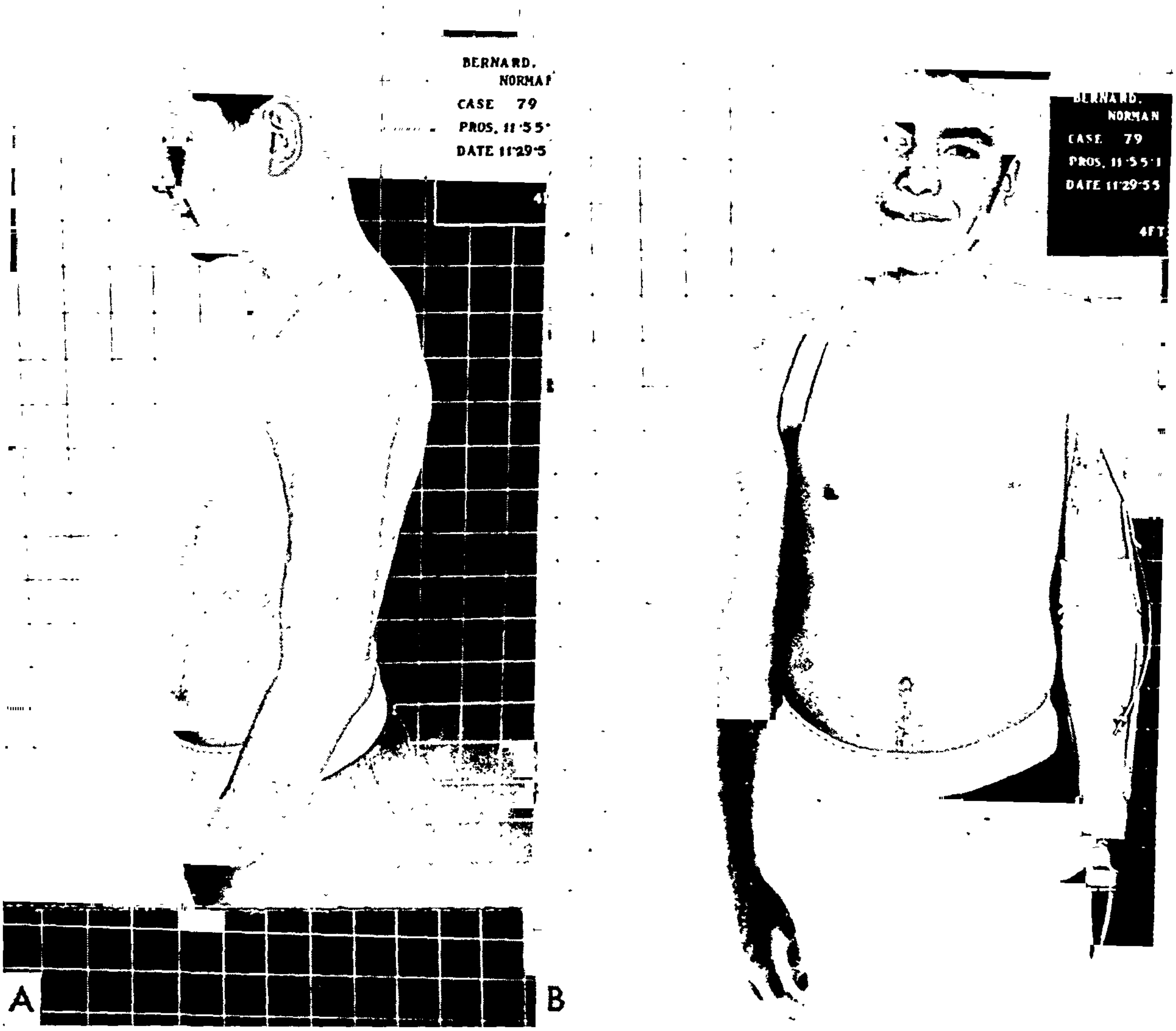
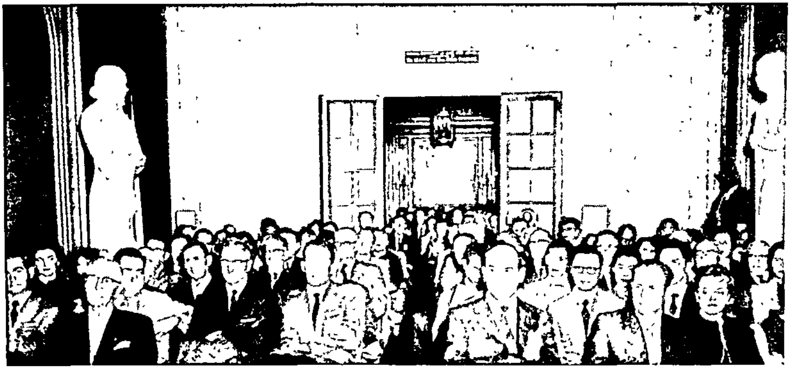


Fig. 6.—*A*, amputation left long below elbow. *B*, standard long-below-elbow prosthesis with hook.

up hinge was provided but did not enlarge her sphere of activities appreciably. On several occasions she expressed resentment at the teasing and questioning her deformity elicited from other children. She was not interested in learning how to operate a prosthesis skillfully. Twenty months later she used the hook sometimes for household tasks and piano playing, with a special terminal device for the latter, but she rarely wore it outside. At this time an APRL hand, interchangeable with the hook, was supplied. She wears the hand infrequently for social activities. She remains essentially a conscious "wearer" as contrasted to a natural "user." Her attitude might be different if she had a smaller hand.

This child, at the age of 10½, had become too proficient with substitute mechanisms to be enthusiastic about wearing a hook, even though it enabled her to do certain tasks more easily. Had she started at the age of 1½ she might have done better. She reflected minimal psychic disturbance from criticism by others. With a functional hand, she occasionally used the prosthesis as a social adjunct. The need for smaller hands is evident here (Fig. 7*C*).

Fitting.—A child instinctively makes maximum use of his own limit, whatever its inherent defect. He will use an artificial limb only if it provides comfort and function. In the weight bearing extremities it is relatively easy to furnish him



A part of Dr. Zimmerman's audience, assembled in the Speidel Hall of the Immortals, International Surgeons' Hall of Fame.

deals primarily with surgery. The others consist essentially of a jumble of prayers, incantations and fanciful prescriptions. This one describes a series of cases, logically arranged. The more superficial injuries are described first, followed by progressively more severe injuries. A definite style is followed in the presentation of each case: Each is headed, "Title," which usually begins with the words "Instructions concerning," and is followed by a designation of the type and location of the injury or disease, for example, "Instructions concerning a gaping wound in his head, penetrating to the bone and splitting his skull." This in turn is followed by the heading, "Examination," which includes a record of the interrogation of the patient, inspection, palpation and observation of movements executed at the direction of the surgeon. These clinical features are the basis on which the "Diagnosis" is reached, and that usually opens with the words, "Thou shouldst say concerning him." A description of the ailment follows, and included is the "Verdict," a statement of the surgeon's decision regarding treatment. He may pronounce any of the following judgments:

1. **"An ailment which I will treat." (This he considers curable.)**
2. **"An ailment with which I will contend." (Thus he records his doubts about the curability, nevertheless instituting his therapeutic measures.)**
3. **"An ailment not to be treated." (With this verdict he emphasizes the seriousness of the case, thereby relieving himself of personal responsibility in the event of a fatal outcome. He refrains from immediate therapy, and restricts himself to watchful waiting and thorough observation of the patient. The inclusion of these cases, even though they are not to be treated, bespeaks a scientific interest in placing them on record.)**

The final section in each case deals with "Treatment." Included in it are mechanical, medicinal, postural and dietary instructions.

The material in this textbook consists of 48 surgical cases, most of which result from injuries. Included are: wounds of the head, 27 cases; injuries of the throat and neck, 6 cases; injuries of the clavicle, 2 cases; injuries of the humerus, 3 cases; injuries of the chest and breast, 8 cases; injuries of the shoulders, 1 case, and injuries of the thoracic portion of the spine, 1 incomplete case.

The book offers us a glimpse of the state of scientific knowledge in that period. The primitive anatomic observations are re-of opinion as to whether inpatient or outpatient training is the more desirable. The Michigan group has an inpatient program. Ours is of the other type. Both groups recognize the necessity for adequate training. The individual needs of the patient often require highly individualized training technics (Cases 1, 3 and 5), but group training of children with similar handicaps at various age levels has been profitable, since competition and mutual interests are favorable factors within such small groups. Parental training is a valuable adjuvant. The school authorities can likewise be helpful, through encouragement of the amputee and in obtaining his acceptance by his classmates as an equal member of the community.

The psychic disturbance occasioned by absence or loss of a member is of greater consequence in many children than it appears on superficial study (Case 6). Formation of an amputated self-image, if it persists too long, militates against the acceptance of prostheses (Case 7). Parental feelings of guilt and desire to hide the deformity or the prosthesis may be unconsciously absorbed by the child and render acceptance more difficult. In such instances psychotherapy for both patient and parent becomes an integral part of the training program. We have organized a discussion group for parents in which they can talk over common problems.

SUMMARY

The study, fitting and training of 100 child amputees has convinced the authors that their problems are best solved by a team approach.

A definite training program is needed. This should be augmented by parental training at home and by the cooperation of school authorities and playmates. Adjuvant psychotherapy is demanded in certain instances.

Regular follow-up visits are mandatory to maintain maximum fit and function of prostheses, and to prescribe further training or other therapy when indicated.

Children can be successfully fitted with lower extremity prostheses when they commence to ambulate, with devices for the upper extremity during their first year. The prosthesis must provide comfort and function.

RÉSUMÉ

L'étude, la préparation et l'entraînement de 100 enfants amputés a convaincu les auteurs que leurs problèmes ne peuvent être résolus que grâce à un travail d'equipe.

Un programme d'entraînement bien défini est nécessaire. Celui-ci devrait être complété par les parents à la maison et par la collaboration des autorités scolaires et des camarades de jeux. Dans certains cas une psychothérapie adjuvante est indiquée. Ces enfants doivent être suivis à intervalles réguliers afin de contrôler l'adaptation fonctionnelle des prothèses et de prescrire l'entraînement et la thérapeutique à poursuivre.

Des prothèses des membres inférieurs peuvent être adaptées avec succès chez les enfants dès qu'ils deviennent ambulatoires. Les appareils des membres supérieurs sont applicables durant la première année. Une bonne prothèse procure un réconfort moral en assurant une activité fonctionnelle.

RESUMEN

El estudio, preparación y entrenamiento de 100 niños amputados ha convencido a los autores, que esos problemas son lo mejor resueltos por un grupo entrenado.

Un programa definitivo de entrenamiento es necesario. Esto debería ser incrementado por el entrenamiento de los padres en casa y por las autoridades de la escuela y compañeros. Psicoterapia coadyuvante es solicitada en ciertos casos.

ing it; his flesh has received wind; his two eyes are blood-shot; it is a dislocation of a vertebra of his neck extending to his backbone which causes him to be unconscious of his two arms and his two legs. If, however, the middle vertebra of his neck is dislocated it is an emissio seminis which befalls his phallus.

DIAGNOSIS

Thou shouldst say concerning him: "One having a dislocation in a vertebra of his neck, while he is unconscious of his two legs and his two arms, and his urine dribbles. An ailment not to be treated.

Gloss A

As for: "A dislocation (*wnh*) in a vertebra of his neck," he is speaking of a separation of one vertebra of his neck from another, the flesh which is over it being uninjured; as one says, "It is *wnh*," concerning things which had been joined together, when one has been severed from another.

Gloss B

As for: "It is an emissio seminis which befalls his phallus," it means that his phallus is erected and has a discharge from the end of his phallus. It is said: "It remains stationary" (*mn s'w*) when it cannot sink downward and it cannot lift upward.

Gloss C

As for: "While his urine dribbles," it means that urine drops from his phallus and cannot hold back for him.

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Freund and Meffert suggested that the lesion is a regional form of osteitis fibrosa cystica, is monostotic, monomelic or unilateral and is due to a congenital defect in bone development.

In 2 of my cases of bilateral cyst of the os calcis in children there were associated congenital defects, which in some respects may support the theory of a congenital origin.

Other causes considered are (1) faulty calcium metabolism, although the serum calcium level is usually normal; (2) inflammation; (3) abnormal hyperplasia of osteoclasts as aforementioned in reference to the work of Geschicter and Copeland, who also suggested that regressive osteoclastasia occurs in bone cysts and progressive osteoclastasia in giant cell tumor, and (4) central bone tumors with cystic softening. It is known that lesions of the cystic type may be associated with a number of different bone tumors, but in my opinion these are usually not typical of the solitary cyst of the os calcis.

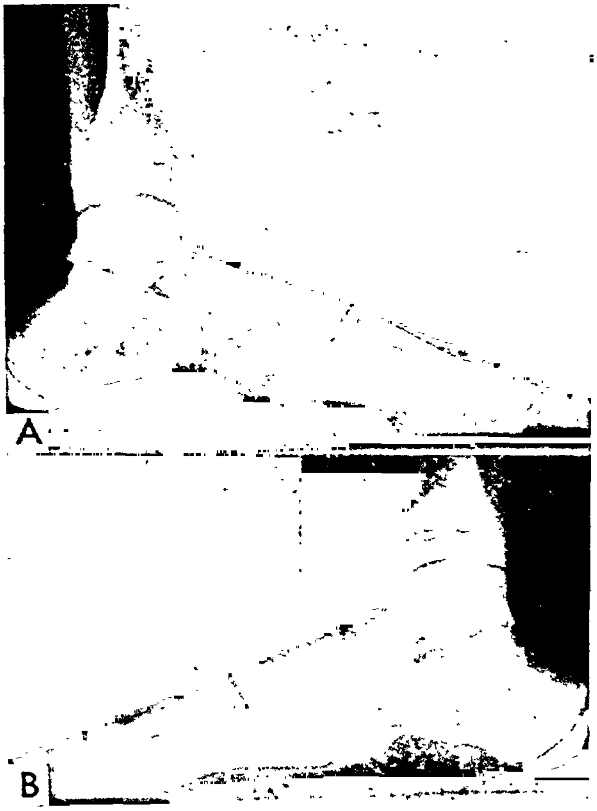

Fig. 1 (Case 1).—*A*, lateral roentgenogram of right foot, showing early cystlike lesions of os calcis. *B*, left foot.

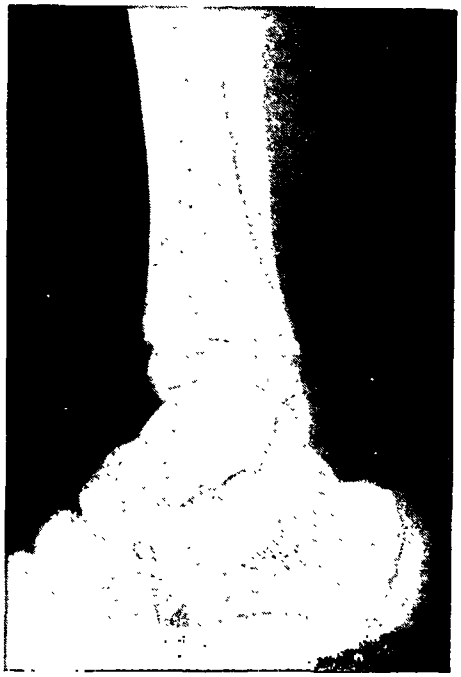

Fig. 2 (Case 2).—Early cystic formation of os calcis (right).

Diagnosis.—Briefly, this depends chiefly on roentgen signs, plus essentially normal levels of blood calcium, phosphorus and alkaline phosphatase, and partly on biopsy (the specimen is not entirely typical of any pathologic lesion but serves to rule out many). For details of the pathologic picture of solitary bone cysts (of various bones) I refer the reader to Stewart and Howel. My own pathologic observations on these cysts, based on only a few cases, are as follows: loose osteoid tissue, a moderate number of fat cells, and a moderate number of giant cells, which are not conclusive evidence of any particular bone lesion (see photomicrograph of biopsy specimen). Symptoms, such as pain in the heel on weight bearing, may occur but are not conclusive.

Space does not permit a discussion of the differential diagnosis, but among le-

BELGIAN SECTION

International College of Surgeons

One of the youngest national sections of the International College of Surgeons is the Belgian Section, which was formally admitted into membership in the College at the Tenth Biennial International Congress in Chicago in September. In a recent communication from **Dr. F. A. Sondervorst**, Secretary General of the Belgian Section, the induction of twelve new members as Fellows of the College was announced. The Section, which from its inception has drawn its members from all parts of Belgium, has enriched its representation with members from eight different cities and towns of the country. Admitted to Fellowship were the following candidates:

- **Dr. René A. L. Neven** of Leut par Eisden, Limbourg
- **Dr. Georges J. G. Lambert** of Tirlemont
- **Dr. René J. H. M. Hubin** of Huy
- **Dr. André a. Arianoff** of Brussels
- **Dr. Edouard E. M. Nicolas** of Huy
- **Dr. Paul-Léopold Tallon** of Geet-Betz
- **Dr. Adhémar Dewulf** of St. Gilles-Termonde
- **Dr. Gustave Jacquemin** of Huy
- **Dr. B. Blankoff** of Brussels
- **Dr. Pierre E. G. Daubit** of Liege
- **Dr. Louis A. E. Quinet** of Cointe-Sclessin
- **Dr. Maurice-Jean-André Wilmott** of Liege

If one were to prognosticate on the growth potentials of the Belgian Section, one would predict that the Fellows who are in membership at the present time will comprise the nuclei around which the organization will expand. There being so many regions currently represented, the outlook for a strong Belgian Section is most promising.

SWISS SECTION

International College of Surgeons

Mr. Edwin Fawer, Administrative Secretary for Europe and the Middle East of the International College of Surgeons has sent word of the splendid work done by the surgeons of the Swiss Section of the College under the stimulus of its president Dr. Nicolet, in connection with the recent mine catastrophe that took place in Belgium. The Swiss Section donated an amount equivalent to $500 for the relief of the victims and their families. Also, when the news of the tragic events taking place in Hungary began to seep through to the outer world, the Swiss surgeons again inspired by Dr. Nicolet, took immediate steps to decide how they could best extend aid for the relief of human suffering. Their decision was to send a team of members of the Swiss Section to Hungary, to render surgical and medical assistance to those Hungarians who so desperately needed skilled professional care. The Swiss team was packed and ready to leave Switzerland within twenty-four hours of the announcement of the revolts and fighting which had begun in Hungary. Their plan was to remain in Hungary for two weeks and lend their skills to the wounded and the ailing.

To match the humanitarian spirit which propelled our Swiss Fellows, a bus company placed transportation facilities at the disposal of the team without charge. In addition, a convoy of twenty trucks, loaded with medicaments and food supplies, representing an investment of thousands of dollars, was prepared to depart to the most beleaguered areas of the stricken land.

Swiss members of the International College of Surgeons were working hand in hand with the International Red Cross, the only agency authorized to have access to Hungary in its time of need through which all aid has

A cast was applied to the right leg, and about two months later the child was essentially normal as to signs and symptoms. No treatment of the cyts *per se* was done.

This case is fairly typical of cysts observed incidentally on roentgenograms taken for other complaints.

CASE 3.—J. A. D., a 4-year-old white girl, was seen in the clinic on Sept. 15, 1947, for macrodactylism of the left second and third toes. There were no symptoms referable to the heel. A roentgenogram (Fig. 3) taken on September 18, showed abnormally increased length and width of the second and third metatarsals and phalanges and cyst formation in both os calces.

Treatment was confined to epiphysiodesis of the proximal phalanges of the involved toes. The cysts themselves were not treated.

This was the youngest patient in the series. Again the cysts were associated with congenital deformity and were fairly well formed at the age of 4 years.

CASE 4.—W. T. H., a 15-year-old white boy, was first seen in the clinic Feb. 17, 1947, *with swelling and tenderness of the left side* of the ankle and left upper tibial region, following a recent injury. There were no complaints referable to the heel.

Roentgenograms taken on Feb. 19, showed probable fracture of the left tibia into the proximal epiphysis, slight widening of the mortise of the left ankle and a rather sharply outlined area of decreased density void of trabecular markings in the left os calcis, about 1 inch (2.5 cm.) posterior to the calcaneocuboid articulating surface (Fig. 4 *A*). Roentgenograms of the opposite os calcis and principal long bones were normal.

Treatment consisted of the application of a long leg plaster cast and was followed by a gradual return to full activity in about five *months. Films taken of the foot on* December 16, showed a slight anterior increase of size in the cyst of the left os calcis (Fig. 4 *B*).

This case indicates that such a cyst may increase in size; in this instance, in about ten months.

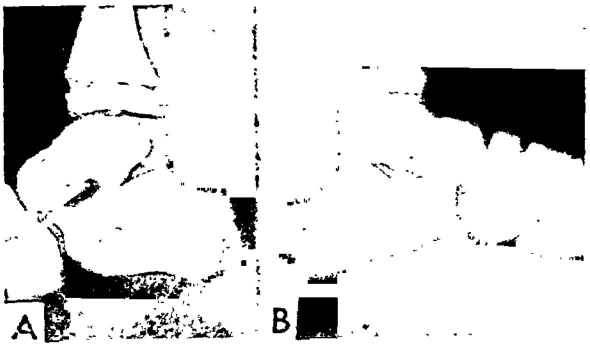

Fig. 5 (Case 5).—*A*, lateral view (Feb. 21, 1948), showing large unicameral type of cyst of left os calcis. *B*, follow-up film (Sept. 25, 1948), showing anterior increase in size of cyst.

CASE 5.—A. S., a 9-year-old white boy was seen in the clinic in February 1948 for symptoms referable to the left ankle. The mother stated that he had complained eight months earlier of pain in the left heel on weight bearing.

Roentgenograms showed a large cyst of the unicameral type in the left os calcis (Fig. 5 *A*) but no abnormalities of the ankle.

The values for blood calcium, phosphorus, alkaline phosphatase and cholesterol were essentially normal. Urinalysis gave normal results.

The ankle sprain healed well with routine treatment, but a slight increase in size of the cyst was observable on roentgenograms taken on August 25 (Fig. 5 *B*).

CASE 6.—C. P. W., a 24-year-old white man, was admitted to a military hospital in August 1944 for swelling and pain in the right ankle and heel, of three months' duration. The history revealed moderately severe trauma on several occasions during the past six years.

Tests of the skin and sputum for coccidiodes were reported as giving negative results.

Examination showed mild generalized tenderness and swelling of the medial and lateral portions of the heel. The roentgenograms were typical of solitary cyst of the os calcis. The values for blood phosphorus and calcium, the sedimentation rate, the Kahn test, a complete blood count and urinalysis were essentially normal (Fig. 6 *A*).

Because of the possibility of fracture of the cyst wall in a young man engaged in vigorous *activity, surgical intervention* was undertaken.

At operation, clear yellowish fluid was observed in a cyst about 1 by 1.5 cm., with a lateral wall about 1/8 inch (0.3 cm.) thick. The cyst was lined with smooth, sclerotic bone. The cyst area was thoroughly curetted and packed with small cortical grafts previously removed from the right tibia.

COLLÈGE INTERNATIONAL DE CHIRURGIENS

FOUNDED BY DR. MAX THOREK

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General Surgery

The Complications, Sequelae, Prognosis and End Results of Operations on the Bile Passageways and the Pancreas

MOSES BEHREND, A.M., M.D., F.A.C.S., F.I.C.S. (Hon.), D.A.B.

PHILADELPHIA, PENNSYLVANIA

MANY of the sequelae and complications of cholecystic surgery can be prevented, as has been shown by Prof. Michels, by a profound knowledge of the normal anatomic picture and its variations with regard to the gallbladder and its ducts. Early in the twentieth century Eisendrath of Chicago was one of the pioneers in bringing these matters to the attention of surgeons and helped lead the way to research in this anatomic field. Not too much attention was paid to these admonitions until a deluge of accidents to the common bile duct occurred. Curiously enough, more accidents occurred to the common duct in the United States than were encountered abroad. Ogilvie of England called the attention of the profession to the fact that there were fewer injuries to the common duct in Great Britain than in any other country. He explained this on the basis of the fact that British physicians were well versed in anatomy. Shortly after his paper appeared, however, the injury to the common duct of Prime Minister Eden was announced, as well as the jaundice that followed as a result. It is past history now that Eden was operated upon

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Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-13, 1956

Submitted for publication Oct. 10, 1956.

from a burning building and also after he had played football years earlier.

Examination showed tenderness on the plantar surface of the right heel, just anterior to the point of origin of the plantar fascia, but otherwise revealed no abnormality.

Roentgenograms taken on the same day showed a well-defined oval rarefied area in the right os calcis, about 1 by 1¾ inches (2.5 by 4.4 cm.) with "ground glass" appearance (Fig. 7 *A*), possibly invading or penetrating the anterior cortex.

The first impression was that of calcaneobursitis, and the roentgenologist suggested polyostotic fibrous dysplasia. Hyperparathyroidism was considered ruled out by normal levels of blood calcium, phosphorus and alkaline phosphatase.

On September 25 operation was performed, as the cyst was considered the most likely cause of pain in the heel.

The cystic area, containing a soft white material, was thoroughly curetted and filled with a single cancellous iliac bone graft.

Convalescence was uneventful, and walking without difficulty was begun on November 10.

The pathologist's report on microscopic sections of the cystic material (Fig. 8) was as follows: "Sections show bone. The lacunae and lamellae are within normal limits. There is no evidence of excessive osteoclastic reaction. Density is less than average, but the reason for the loss of density is not apparent in the histologic picture. There is no evidence of inflammatory reaction or of pathologic change. The cause of the bone cyst is not explained by the histologic appearance."

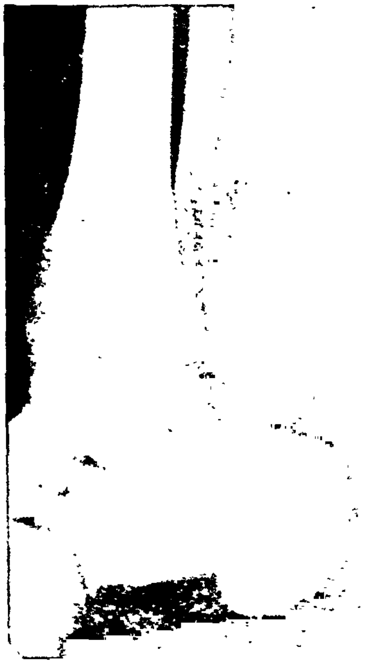

Fig. 9 (Case 8).—Roentgenogram taken April 26, 1948, of right ankle, showing unicameral cyst of os calcis in typical anterior-plantar location.

Roentgenograms taken on Feb. 10, 1942, showed fairly good filling of the cystic area with bone (Fig. 7 *B*). A localized rarefied area was still present in the posterior part of the cystic area.

This is a case in which the plantar heel symptoms were possibly referable to the cyst. The roentgenographic appearance and the results of biopsy were typical.

CASE 8.—D. P., a 21-year-old white man, was seen by a colleague, an orthopedist, on April 26, 1948, for sprain of the right ankle incurred in athletics. The history revealed frequent strains of both ankles. Several normal roentgenograms of the legs and chest had been taken. There was no complaint of pain or tenderness in the heel.

Examination showed moderate swelling and tenderness of the right side of the ankle and the posterior portion of the foot. Pronation of both ankles and flatness of the longitudinal arches were observed.

Roentgenograms taken the same day showed a unicameral cyst of the right os calcis, about ¾ by ⅞ inch (1.9 by 2.1 cm.) in the typical anterior-plantar aspect of the bone (Fig. 9).

Treatment consisted of protection of the ankle. The patient gradually returned to full activity in about six weeks. No symptoms referable to the heel were noted.

This last case shows a fairly large unicameral cyst without definitely referable symptoms, although with a history of repeated trauma to the foot and ankle involved.

SUMMARY

Eight cases of solitary or unicameral cyst of the os calcis are presented, in 4 of which the patients were children. Symptoms possibly referable to the cyst were present in a small percentage of cases. Two patients were treated surgically.

So far as present studies and the literature are concerned, the exact cause of solitary os calcis cyst is apparently unknown. A congenital factor and repeated trauma are suggested as possible causes.

destroyed duct can be dissected out. Turning up of the duodenum and dissecting out the distal portion of the common duct is a valuable part of the technic. If possible, it is much better to perform an end-to-end anastamosis without the intervention of any foreign tube or material.

Stricture of the Common Duct. — The most important factor in prevention of stricture to the common duct is, as has been stated, a thorough knowledge of the ductal anatomic picture and the anomalies that may occur in these structures. It has been stated by some that use of the T tube for drainage is one cause of stricture of the common duct. My service has been using the T tube for the past fifty years, and it has not been responsible for a stricture at any time. As a matter of fact, a number of strictures operated upon have been due to ligation of the common duct and a ligature around the cystic duct, placed too close to the common duct.

The various operations for the repair of strictures and destruction of the common duct have been mentioned.

Acute Cholecystitis (Acute Empyema). —This is a controversial subject. It is considered here because perforation in some clinics occurs frequently when medical treatment is employed. The main cause of these perforations is that the patients are fed as usual; starvation is the only method by which perforation can be avoided. If the patient is fed parenterally, the acute symptoms will subside within twelve hours and will remain in subsidence as long as the starvation diet is maintained. The optimal to operate for acute cholecystitis is after the acute symptoms have subsided. Recently Doubilet and Mulholland, and in addition, Pearce, have supported this regime, which may take two, three or four days after the attack. As a result of this waiting period I have encountered gallbladders that were gangrenous in patches, but it demonstrated that the starvation treatment will prevent perforation.

Cholecystectomy is always performed in such cases, provided the surgeon has waited long enough to allow the subsidence of symptoms. Cholecystostomy is a rare operation in my service. It is performed only when the patient has reached the seventh decade of life or when there are signs of perforation of the gallbladder that can be detected by an extreme tenderness in the right hypochondriac region.

One should never hesitate to operate for these acute conditions if the symptoms do not subside within twenty-four to forty-eight hours. A high gangrenous ruptured appendix and acute pancreatitis may simulate the symptoms of acute cholecystitis.

The morbidity and mortality rate of acute cholecystitis can be reduced by not operating on an emergency basis. Many years ago, when this was done, deaths occurred frequently because the operation was done too soon. The toxins of inflammation seemed to spread rapidly, and within twenty-four hours the patient died. Since waiting for the subsidence of symptoms has been the rule, the death rate has been 1 per cent.

Cholelithiasis vs. Coronary Cardiac Disease.—It has been known for many years that there is a definite connection between chronic disease of the gallbladder and myocardial changes with occlusion of the coronary arteries. It is most difficult sometimes to separate the two. They may also be concomitant. Roentgen and electrocardiographic studies will usually clarify the situation. Patients whose condition has been definitely diagnosed as coronary thrombosis have been relieved of their symptoms, and some, apparently, have been cured. Perhaps there is a focal infection that must be considered when these two conditions exist coincidentally. In several cases in which operation was performed here there has been no recurrence of cardiac symptoms.

Phosphate im Blut haben, soweit sie in dieser Serie ausgeführt wurden, im wesentlichen normale Befunde ergeben.

Die Probeexzision ergab nur eine gewöhnliche Zyste und diente im wesentlichen nur dazu, eine Reihe anderer Erkrankungen auszuschliessen.

RÉSUMÉ

Huit cas (dont 4 chez des enfants) de kyste solitaire ou unicellulaire du calcaneum sont présentés. Des symptômes probablement en rapport avec le kyste ont été constatés dans un petit pourcentage de cas. Deux malades ont été traités chirurgicalement.

La cause du kyste solitaire du calcaneum semble encore inconnue. Un facteur congénital et des traumatismes répétés pourraient être incriminés. Il parait possible de penser à des fractures dans ces cas bien que ce fait n'ait pas été mentionné.

La majorité des kystes de ce genre sont diagnostiqués incidemment par des radiographies faites pour une autre affection. Habituellement aucun symptôme n'en indique la présence.

Les examens chimiques du calcium sanguin, du phosphore et des phosphates alcalins se sont révélés normaux. La biopsie n'a montré qu'un kyste simple et a servi surtout à éliminer d'autres affections.

SUMARIO

São apresentados oito casos de cistos isolados ou uni-cavitários do calcâneo, quatro dos quais com incidência em crianças. Os sintopropriamente ligados aos cistos foram encontrados em pequena percentagem dos casos. Dois pacientes foram tratados cirúrgicamente. Tanto quanto permitam os estudos atuais e os registros da literatura a exata etiologia dêsses cistos é, aparentemente, desconhecida. São sugeridos como causas um fator congênito e o trauma repetido. Embora considerando possivel a existência de fraturas entre os casos citados nenhuma ocorrência foi meccionada.

As companhias de seguros e os serviços militares assim como organizações similares podem ter assinalado casos de fraturas "patológicas."

A maioria dos cistos do tipo descrito é diagnósticada acidentalmente durante os exames radiográficos por outros motivos. Não há, habitualmente, sintomatologia própria.

Os estudos da bioquímica do calcio, do fósforo e dos fosfatos alcalinos, nesta serie, quando feitos, demostraram normalidade.

A biópsia revelou apenas cisto simples e servio, principalmente, para afastar a hipotese da existência de outras lesões.

RESUMEN

Ocho casos de quiste solitario o unicameral del os calcis son presentados, en cuatro de los cuales los pacientes fueron niños. Posiblemente síntomas referidos al quiste, estuvieron presentes en un pequeño porcentaje de casos.

Dos pacientes fueron tratados quirúrgicamente. Hasta aquí los estudios presentes y la literatura son concernidos, la causa exacta del os calcis del quiste solitario es aparentemente desconocido.

Un factor congénito y trauma repetido son sugeridos como causas posibles.

Hasta la fecha ningún record de fractura entre estos quistes ha sido descubierto, aunque esto parece razonable que fracturas hayan ocurrido y hayan sido reportadas.

Responsabilidades tanto de seguros como militares y otras, pueden estar envueltas en casos de fracturas patológicas.

La mayoría de los quistes son diagnosticados accidentalmente con rayos X tomados por otras razones. Usualmente no hay síntomas referidos al quiste.

cissement n'est jamais imputable au tube en T; il est dû, dans la majorité des cas, à des erreurs de techniques opératoires.

20. La perforation de la vésicule biliaire est une complication rare, à condition que le patient soit soumis à un régime affamant durant la crise aiguë.

21. Avant d'opérer il faut, autant que possible, attendre la fin des symptômes aigus. Une opération d'urgence est nécessaire dans 2% des cas environ.

22. Il arrive souvent que l'on confonde des symptômes de cholélithiase avec ceux d'une affection coronarienne. Le diagnostic différentiel est en général possible grâce à un radiogramme et à un électrocardiogramme.

23. La "mort hépatique" était autrefois une complication redoutée. Elle est aujourd'hui pratiquement éliminée, grâce à une meilleure préparation et à une technique perfectionnée.

24. La pancréatite aiguë est une affection très douloureuse, mais elle ne justifie pas une opération d'urgence.

25. La ligature accidentelle de l'artère hépatique est une complication grave, toujours mortelle.

26. Le carcinome des voies biliaires représente environ 6% des cas. Le cancer du pancréas atteint un pourcentage élevé.

SCHLUSSFOLGERUNGEN

1. Zur Erzielung der bestmöglichen postoperativen Ergebnisse ist eine genaue Kenntnis der Anatomie und Physiologie der Leber, der Bauchspeicheldrüse und der Gallenwege von Wichtigkeit.

2. Wenn auch die Ausführung von Leberfunktionsprüfungen in manchen Kliniken regelmässig ausgeführt werden, so ist doch die Bestimmung der Prothrombinzeit die wichtigste Untersuchung.

3. Die Funktionsprüfungen sind hilfreich in der Unterscheidung von Hepatitis und Obstruktionsgelbsucht.

4. Eine vollständige Blutuntersuchung einschliesslich chemischer Analyse und Zentrifugierung sollte stets ausgeführt werden.

5. Bluttransfusionen sollten vorgenommen werden, wenn eine Indikation vorliegt, besonders in Fällen von Gelbsucht.

6. Das Vitamin K ist das spezifische Mittel zur Verhütung von Blutungen bei ikterischen Kranken.

7. Antibiotika sollten vor der Operation in Fällen akuter Erkrankung und nach der Operation in jedem Fall verabreicht werden. Penizillin ist ein spezifisches Mittel gegen Infektionen mit Clostridium Welchi.

8. Von Gallenblasenresektionen ohne das Vorliegen von Gallensteinen sollte abgeraten werden. Die Operation führt nicht zur Heilung.

9. Dem Zurücklassen eines grösseren Abschnittes des Gallenblasenganges ist grosse Bedeutung als Ursache späterer Krankheitserscheinungen zugeschrieben worden. Dies ist jedoch nicht so wichtig, weil man gewöhnlich einen zurückgebliebenen Stein findet.

10. Als Technik der Gallenblasenresektion sollte ein als "offene Methode" bekanntes Verfahren angewandt werden.

11. Die Gallenblasenresektion kann von unten nach oben oder in umgekehrter Richtung ausgeführt werden. Der Verfasser bevorzugt ein Vorgehen von oben nach unten, obgleich es Zustände gibt, die eine Operation in umgekehrter Richtung ratsam erscheinen lassen.

12. Eine Drainierung des Operationsgebietes wird fast allgemein durchgeführt. Wenn das Operationsfeld trocken ist, erübrigt sich die Drainierung.

13. Subhepatische und subphrenische Exudate scheinen bei Anwendung der Drainierung häufiger vorzukommen, als wenn man auf sie verzichtet.

14. Dyskinesie nach Gallenblasenresektionen führt zu lästigen Krankheitserscheinungen.

Thoracic Surgery

Surgical Treatment of Hydatid Cysts of the Lung in Two Hundred Cases

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IN the lung the hydatid cyst is nearly always unilocular, with liquid contents, and the [parasitic] membrane is surrounded by an adventitial layer. This is a fibroconnective lamina related to the lung, which has thus reacted to the growth of the cyst. This description applies to the pure and noninfected hydatid cyst. When the cyst has reached a large size it generally opens into a bronchus, and hydatid vomica or hydatidoptysis occurs. Rupture of the cyst in the pleura is less frequent (hydatidopleura). At any rate, in either case it becomes infected.

Symptoms. — The main symptoms are those of a bronchopulmonary suppurative condition. The presence of complicated cysts with a prolonged clinical course, other pulmonary lesions, such as bronchiectasis or pleuritis, appear.

Treatment. — Surgical treatment varies according to the number, size and clinical course of the cysts and according to the presence or absence of complications.

The parasite and the host must both be taken into account: in other words, removal of the larvae or cysts and treatment of associated pulmonary lesions, if any, will be required, with prophylactic measures directed toward the residual pulmonary cavities.

Material and Methods.—In the Institute of Thoracic Surgery of Buenos Aires, 273 cysts in 200 patients have been treated in 224 operations (Table 1).

TABLE 1.—*Surgical Treatment of Hydatid Cysts*

Patients	200
Operations	224
Cysts	273
Noninfected	148
Infected	125

Hydatid cysts with a presumptive or confirmed diagnosis were operated upon, with the patient under general anesthesia, in a closed circuit after laryngotracheal intubation with cyclopropane-ether-oxygen. Induction was obtained with intravenous pentothal sodium. In some cases curare was injected and cyclopropane replaced by nitrous oxide.

TABLE 2.—*Data on Two Hundred and Twenty-Four Operations*

Pulmonary Resections		93 (41.5%
Pneumonectomy	4	
Lobectomy	37	
Partial resection	52	
Other Procedures		131 (58.5%
Marsupialization	81	
Posadas operation	45	
Drainage	5	

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. . . The experience afforded in an hospital will keep down the luxuriance of plausible theories. Many such have been delivered in lectures by celebrated teachers, with great applause; but the students, though perfectly masters of them, not having corrected them with what nature exhibits in an hospital, have found themselves more at a loss in the cure of a patient than an elder apprentice of an apothecary.

It is true that the scientific value of an observation usually increases with its generality. But unique facts may also possess profound scientific significance. Take Tycho Brahe's discovery of a nova, a new fixed star, in 1572, or the synthesis of urea by Wöhler in 1828. The great scientific value of these discoveries lay in the fact that they fundamentally changed our conception about the nature of things. The birth of Tycho's new star proved that the empyrean was subject to change. Its occurrence invaded the last area of the universe still reserved to the rule of divine principles and annexed it to the realm of accident and necessity: a fit subject of empirical science. By this discovery Tycho anticipated Newton's demonstration that the same laws governed the stars in their courses and the swing of a clock's pendulum. Similarly, Wöhler by his synthesis of urea broke through the barrier between the inanimate and the living. He proved that no "life-force" was required for the production of organic matter, and thus opened the path to biochemistry.

Discoveries like those of Tycho or Wöhler are valued for the breadth of their implications, even though they establish no new general laws. They offer something more vague and also more profound: namely, a truer understanding of a large *domain of experience. Generality is indeed but an aspect of profundity in science, and* profundity itself, . . . but an expression of the feeling that we are making a new, more intimate, contact with reality.

—*Polanyi*

In surgical treatment, three objectives must be kept in mind: liberation from echinococcosis, healing of the affected organ and functional recovery.

Surgical treatment as established by Posadas (closure without drainage), with any of its modifications, or pulmonary resection (atypical, segmentary or lobular) may be indicated.

Rupture of the cyst into the pleura permits evacuation of the parasite partially or totally lodged in the lung or in the pleura (Table 5).

Surgical decortication achieves pulmonary re-expansion and occlusion of the pleural cavity. The technic must be adjusted to the treatment of empyema or hydropneumothorax due to pulmonary perforation.

All lesions caused by chronic bronchoalveolitis, bronchiectasis or secondary sclerosis are important in the area near chronically infected hydatid cysts. The irreversible nature of these lesions justifies pulmonary resection.

This operation was performed in 55 cases of noninfected and 53 cases of infected cysts. Three deaths occurred in 93 resections.

Marsupialization or drainage was employed in 30 cases of noninfected and 52 cases of infected cysts. One death was recorded among the 81 operations performed by this method.

Posadas' operation was performed in 58 cases of noninfected and 16 cases of infected cysts. One death was recorded in the 45 operations.

Pleural drainage was carried out in 9 cases.

As a result, of 224 interventions for treatment of 273 cysts, a primary mortality rate of 2.7 per cent (6 deaths) was recorded.

For partial resection various surgical procedures were employed, each of which should be considered separately.

TABLE 3.—*Surgical Treatment of Two Hundred and Seventy-Three Cysts*

	Total	*Non-infected*	*Infected*	*Operations*	*Deaths*
Pulmonary resection	108	55	53	93	3
Marsupialization	82	30	52	81	1
Posadas' operation	74	58	16	45	1
Drainage	9	5	4	5	1
	273	148	125	224	6

TABLE 4.—*Pulmonary Resections (93 Operations; 108 Cysts)*

	Noninfected	*Infected*	*Deaths*
Partial resection (segmentary-wedge-shaped)	42	17	..
Lobectomy	10	33	2*
Pneumonectomy	3	3	1*
	55	53	3 (2.8%)

*Infected.

TABLE 5.—*Hydatid Cysts of the Lung Opening into the Pleural Cavity (11 Patients)*

	OPERATION					*Deaths*
Pleural Drainage	THORACOTOMY				*Thoracoplasty*	
	Marsupialization	*Decortication*	*Posadas' Operation*	*Pulmonary Resection*		
+	+	—	—	—	—	—
+	+	—	—	—	+	—
+	+	—	—	—	—	—
+	+	+	—	—	—	—
+	+	—	—	—	—	—
+	—	—	+	—	—	—
+	+	+	—	—	—	—
+	—	+	—	+	+	—
—	—	—	—	+	—	+
+	+	+	—	—	—	—
+	—	—	—	+	—	—

oder diätetische Faktoren eine Rolle spielen.

CONCLUSIONI

Il pericolo della tromboembolia sembra meno grave in Grecia che altrove. La sua frequenza è aumentata notevolmente dopo i tagli cesarei. Non pare che l'impiego degli antibiotici abbia alcun effetto sull'-incidenza della trombosi.

Se questa osservazione sulla tromboembolia in Grecia sarà confermata anche nel futuro, si dovranno ricercare i fattori climatici o dietetici responsabili.

CONCLUSIONS

La fréquence de la thrombo-embolie semble être moins élevée en Grèce qu'ailleurs. Il a été constaté qu'elle augmente après une césarienne. Ce fait constitue un facteur de plus confirmant l'auteur dans sa théorie selon laquelle 4) il faut éviter de prendre trop souvent la décision hâtive de résoudre tous les problèmes d'obstétrique par la césarienne. L'emploi des antibiotiques ne semble pas avoir eu d'effet sur l'incidence de la thrombose.

Si cette théorie de la moins grande fréquence des thrombo-phlébites en Grèce devait se confirmer, il resterait encore à déterminer si les facteurs climatiques ou diététiques jouent un rôle.

CONCLUSOES

Na Grecia o perigo da trombose de modo geral parece menor que alhures. A frequencia é muito grande após as cesarianas. Há um fator adicional que reforça a opinião do A. e que é a ausência de indicações precipitadas para solver as situações obstétricas sempre pela cesariana. O uso de antibióticos não parece ter influido na incidência das tromboses.

Caso essa teoria de tromboflebite na Grecia seja confirmada futuramente é preciso determinar a possivel influência de fatores climáticos ou dietéticos.

CONCLUSIONES

En Grecia, el peligro de las trombo-embolias parace ser en general menos agudo que en otras partes. Su frecuencia aumenta notablemente después de las cesáreas. Este es un factor más que refuerza la teoría del autor de que no debe haber una decisión precipitada para resolver todos los problemas obstétricos por medio de esta operación.

El uso de los antibióticos no parece haber tenido efecto alguno en la incidencia de la trombosis.

Si esta teoría de la tromboflebitis en Grecia se confirma en el futuro, todavía queda por determinar si hay factores climatéricos ó dietéticos envueltos en el problema.

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* * *

Some generality of understanding is the essence of civilized culture, and is a crying need in medicine and we must seek it earnestly if we are not to decline to the level of craftsmen and technicians.

—*Walshe*

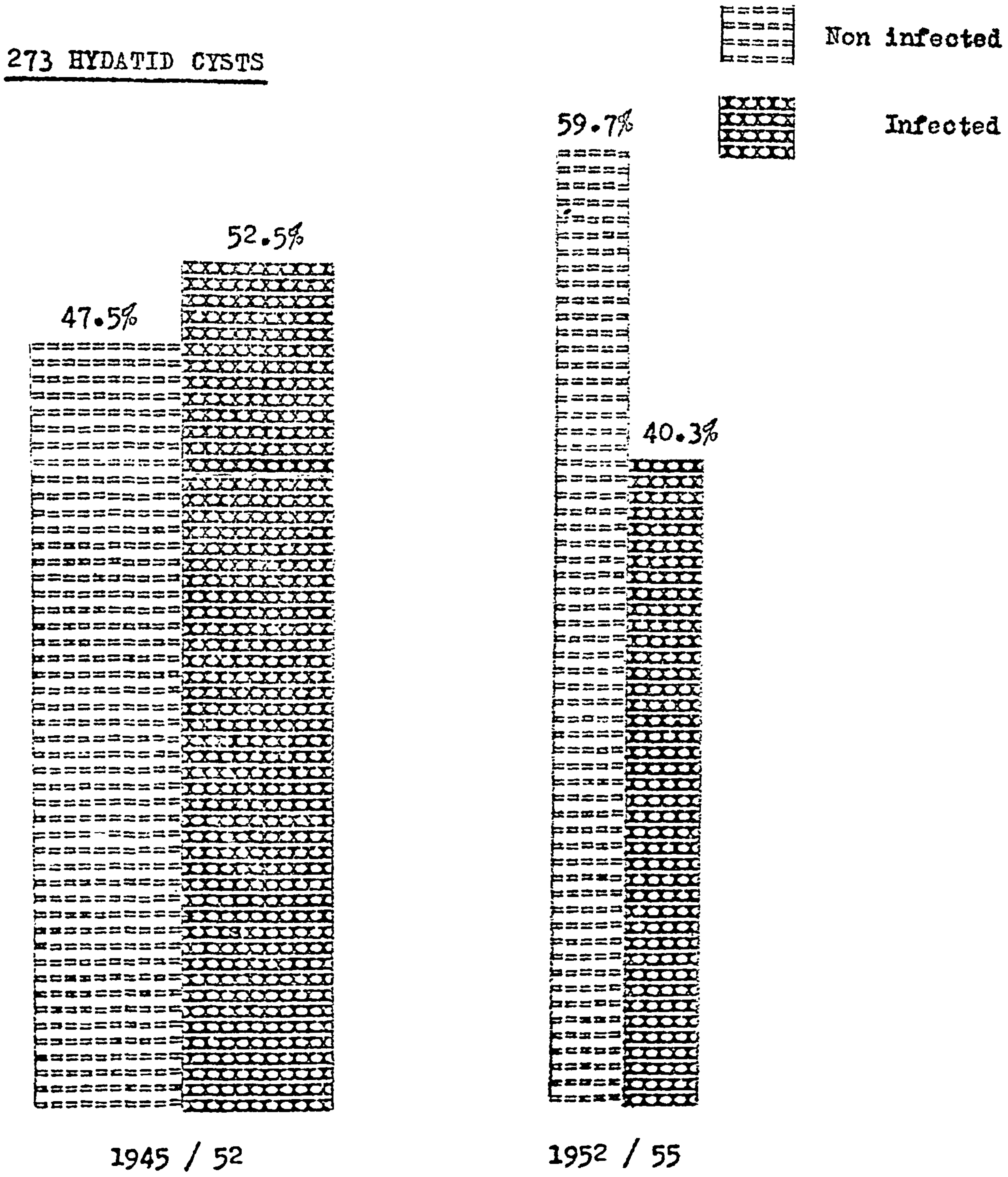

Fig. 2 (see text).

cation was performed, with drainage of the adventitial cavity: the results were excellent. In the oldest patient, secondary pleural echinococcosis eventually developed, and four more operations were required; one thoracophrenolaparotomy and three thoracotomies with marsupialization of the cysts.

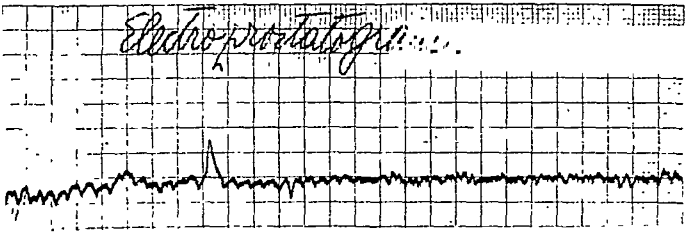

Fig. 4.—Electroprostatogram of dog.

cases, however, the sensitivity has to be increased. It is advisable to register the renal potentials for half an hour, especially if the kidney fails to "write" at the beginning or if it stops writing shortly after the registration begins.

What happens if there is no registration? If the machine is in good working order and all conditions for registration fulfilled correctly, only the discontinuous production of currents is to be blamed for failure of registration. In such cases it is advisable to leave the needles in place, stop the machine, and after about ten minutes start anew with the registration. Figure 3 shows the arrangement of active and inactive electrodes for the registration of renal potentials.

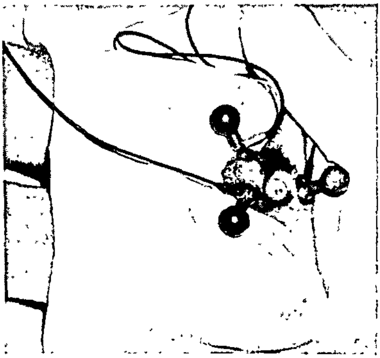

Fig. 5.—Electro-orchidographic technic.

3. *The Prostate Gland* (Fig. 4) : In animal experiments the prostate gland must be exposed surgically; clinical work on human beings is still in the experimental stage. It is too early, therefore, to describe a definite technic.

4. *The Testicles*: Concerning the technic of testicular registration of the testicles (electro-orchidograms), two suction cups are placed on the testicle and the inactive electrodes somewhere in the area of the symphysis, but away from the large vessels (Fig. 5). Needles are not to be used, lest the organ be traumatized. Because of the small size of the organ, infant suction cups are preferred. Again both organs, the healthy and the diseased, can be registered simultaneously; similarly, both testicles can be seen from Figure 6.

The curves show great variations, as can be seen from Figure 6. Figure 6*A* shows the result with a sexually active man; Figure 6 *B*, that of a sexually inactive man. It is important, therefore, to take the history of the patient with regard to sexual activity, as well as the date of his last emission before the curves are registered.

5. *Body Fluids and Tissue Cultures*: For tissue cultures, suction cups are used. They are placed on agar surfaces in the Petri dishes in which cultures are grown. For

TABLE 7.—*Children Under 15 Years of Age*

Patients	35
Operations	45
Cysts	54

			Noninfected	*Infected*
With pulmonary resection 14	Lobectomy	5	2	4
	Partial resection	9	8	1
Without pulmonary resection 42	Marsupialization	14	7	8
	Posadas' operation	26	19	7
	Pulmonary decortication + Marsupialization	1	....	1

other cases we prefer partial resection or other procedures (Posadas', marsupialization, etc.), considering the easy anatomic and functional recovery of children's lungs and hence the undesirability of serious surgical mutilation.

Surgical treatment without pulmonary resection was employed in the treatment of 42 cysts. In 15 cases marsupialization was carried out; in 26 Posadas' operation was performed, and in 1 case of cystic rupture into the pleural cavity marsupialization of the adventitia and pulmonary decortication were performed.

Evacuation of the parasite in cases of extremely large cysts, occupying nearly the entire lobe, was followed by reexpansion of a considerable area of lung.

The adventitial cavity was seen to disappear with surprising rapidity.

Multiple Pulmonary Echinococcosis. — In 41 of 200 cases, echinococcosis proved to be multiple. Localization was bilateral in 16 cases and unilateral in 25 (Table 8).

TABLE 8.—*Multiple Pulmonary Echinococcosis*

Unilateral Cysts		25
Right side	12	
Left side	13	
Bilateral Cysts		16

TABLE 9.—*Data on Two Hundred and Seventy-Three Hydatid Cysts*

	1945/1952: 124 Cysts		*1952/1955: 148 Cysts*	
Noninfected	59	47.5%	89	59.7%
Infected	65	52.5%	60	40.3%
Pulmonary resection	66	53.2%	42	28.1%
Other procedures	28	46.8%	107	71.9%
Marsupialization	39		43	
Posadas' operation	15		59	
Drainage	4		5	

COMMENT

Since 1952, patients undergoing operation are younger than those formerly operated on (Fig. 1). In addition, the average incidence of noninfected cysts is higher than before 1952 (Fig. 2). This is the result of (1) improved training of doctors and the public in sanitation; (2) mass roentgen examinations of the thorax, and (3) improved surgical treatment.

According to these data, pulmonary resection is performed less frequently than it was some years ago (Table 9 and Fig. 2).

SUMMARY

A brief résumé of the diagnosis and surgical treatment of hydatid cyst of the lung is presented.

hantes a tomada do E.C.G. Em 1953 ele comunicou que registrou potenciais do parenquima renal e em 1956 conseguiu registrar os das suprarenais, da próstata e dos testículos como também de cultura de tecidos, esperma e amostras de urina nas quais estavam presentes celulas epiteliais, eritrócitos e leucócitos em quantidade suficiente para produzir cargas eletricas. Descreve a técnica.

Os resultados dos trabalhos experimentais feitos em animais, do ponto de vista biologico e urológico, foram transferidos para a experiência clínica. Na opinião do A. os eletrogramas abrem caminho a tais investigações até então impraticáveis e poderão resultar em novos métodos de tratamento de doenças uro-genitais, esterelidade e afecções similares, assim como estudos de patologia em outros sectores.

RESUMEN

Por algunos años, el autor se ha interesado en explorar los potenciales de otras estructuras aparte del carazón, en respuesta a procedimientos de investigación similares a la toma de un electrocardiograma. En 1953 él reportó haber registrado potenciales del parénquima renal y en 1956, tuvo éxito registrando potenciales de las glándulas suprarenales, la próstata y los testículos, así como de tejidos en cultivo, semen y especímenes de orina con células epiteliales, eritrocitos y leucocitos en suficiente cantidad para producir corriente eléctrica. Su técnica se describe. Tanto los datos biológicos como urológicos han resultado de trabajo experimental en animales y de experiencias clínicas con pacientes humanos. En la opinión del autor, los electrogramas preparan el camino para neuvas investigaciones, no posibles hasta ahora, y conducirán a nuevos métodos en el manejo de enfermedades genitourinarias, *esterilidad y condiciones similares*, así como en nuevas vías de acceso tanto fisiológicas como patológicas hacia enfermedades en otros campos.

◆

In the year of our lord 1536, Francis, the French King, sent a puissant army beyond the Alps. In with all sort of weapons, but chiefly with bullets. I will tell the truth, I was not very expert at that time in matters of Chirurgie. . . . I observed and saw that all the Chirurgions used that method of dressing which Vigo prescribes: that they filled, as full as they could, the wounds made by gunshot with tents and pledgets dipped in scalding oyle at the first dressing. . . .

—*Paré*

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Correction: We regret to state that in the article "Congenital Absence of the Gallbladder in Man," which appeared on Pages 279 to 282 in the September issue of the Journal, the name of the author, Dr. N. N. Iovetz-Tereshchenko, was misspelled. Dr. Iovetz-Tereshchenko also writes us that the word "listed" in the first paragraph of the article should be "stated" and that the sentence "Routine appendectomy was done" should have appeared in the case report on Page 280.

ment over each disc interspace enter the dorsal sensory roots two segments above. Abnormal tension in this ligament at the level of an unstable joint is another source of pain, and particularly when there is posterior protrusion of the disc.

Operative Technic. — The instruments used and the surgical procedure followed in doing intervertebral body fusion were described by Wiltberger[4] in 1953.

The instruments used in this procedure are a broad nerve root retractor, a 5/8-inch hole saw with a retractable stilet, a 5/8-inch drill and guard sleeve, a 5/8-inch guard sleeve alone, a 1/2-inch hole saw, a 1/2-inch drill and guard sleeve alone, a tampon, a brace and a vertebra spreader. The 1/2-inch dowel graft is large enough for most intervertebral spaces. One seldom encounters a patient so large that the width of the intervertebral spaces would require the use of a 5/8-inch dowel.

Although it is agreed by most surgeons that the intervertebral body fusion is ideal, considered from a mechanical point of view, many consider the operative technic too difficult and not without hazard. For this reason Wiltberger attempted to perfect a simple body-to-body fusion. Although this is simpler, it too is not without hazards, the chief one being that the nerve root must be completely retracted medially before the guard sleeve is introduced between the laminae. The dowel type of intervertebral body fusion depends in principle on making standard size drill holes, for example, 1/2 inch in diameter between the vertebral bodies across the intervertebral disc space, and in inserting into these holes standard, pre-cut dowels of autogenous or homogenous bone that are 1/2 inch in diameter.

My preference is for autogenous cancellous bone procured from a posterior-superior iliac spine. First, an incision 3 or 4 inches (7.6 to 10.1 cm.) long is made over the spine, and two or more dowels of cancellous bone are cut out with the 1/2-inch hole saw. The dowels are 3/4 to 1 inch (1.9 to 2.5 cm.) long. The muscles in this wound are closed with black silk or No. 1 chromic catgut sutures as preferred, and the skin is closed with sutures of black silk.

After separation of the muscles from the spines and laminae of the lumbosacral region, a routine bilateral, interlaminar exposure is done by rongeuring away a portion of the lamina above and below on both sides to a diameter of 3/4 inch. The vertebral bodies are distracted by cutting away the interspinous processes. Two transverse incisions are made in the posterior longitudinal ligament at the upper and lower borders of the intervertebral space. The portion of the posterior longitudinal ligament between the incisions, the annular ligament and the protruded intervertebral disc are excised, and the intervertebral space is thoroughly curetted. The dura and nerve roots are covered with a strip of cottonoid and retracted medially with a broad nerve root retractor, so as to protect them.

Depending on the depth to which one wishes to sink the drill hole, the longer or the shorter sleeve is chosen and inserted in a slightly oblique manner. The 1/2-inch drill is then placed in the sleeve and drilled between the vertebrae until it is stopped by the sleeve from further penetration. This prevents the drill from passing through the anterior surface of either vertebra. The drill and the sleeve are then withdrawn, and the loose cancellous bone is removed from the 1/2-inch hole between the distracted vertebrae. A 1/2-inch dowel is then pushed in firmly with a tampon and countersunk 1/4 inch.

In a similar manner the dura and nerve root on the opposite side are retracted medially, the sleeve is inserted in a slightly oblique position, the 1/2-inch drill is introduced into the sleeve and a hole is drilled between the vertebrae until the sleeve pretance in resectional therapy for tuberculosis of the lung, as demonstration of bronchiectatic segments is most helpful to the surgeon.[6] Likewise, its use has been recommended to rule out significant endobronchial lesions in the selection of cases for permanent collapse therapy.[7] Some perform bronchographic studies preoperatively and postoperatively with all thoracoplasties, as a means of evaluating this therapy.[8] Early neoplastic disease or other obstructing lesions may be revealed bronchographically when all other diagnostic efforts have failed.[9] In fact, the bronchographic procedure is now utilized without hesitation when any diagnostic problem involving the lungs is encountered.

The intratracheal instillation of drugs as practiced in the nineteenth century on an empiric basis has thus become a reliable, reasonably safe and fundamental tool in the evaluation of a host of diagnostic and therapeutic problems related to the lung.

Complications. — The warning that bronchographic investigation might be followed by complications came early after the introduction of lipiodol in 1922.[10] Many reports have suggested that lipiodol, which is 40 per cent iodine in poppy seed oil, is capable of producing serious pulmonary and systemic complications. Acute iodism,[11] acute massive collapse of the lung,[12] spread of tuberculous disease,[10] postoperative atelectasis[13] and fatalities[11] have been recorded. The Council on Pharmacy and Chemistry of the American Medical Association in 1932 cautioned that lipiodol should not be used when darkened and that intratracheal injections should be avoided in the presence of tuberculosis of the respiratory organs.[14] Proliferation of the bronchial epithelium,[16] tissue fibrosis[17] and the formation of granulomas[18] have been described as occurring in human patients and in experimental animals.

In contradistinction, many series of bronchograms with lipiodol have been done without serious complications and without fatalities.[19] Experiments in animals have failed to show marked histologic changes in the lungs of the animals after they were killed.[19b] Several series have shown it to be safe for the tuberculous patient. Park[20] has prevented iodism in bronchographic studies with lipiodol by using ACTH. Theodos[21] has shown that the iodine-sensitive patient can be desensitized with ACTH before bronchographic studies are undertaken.

All these reports, though contradictory in many respects, have indicated a need for a medium free from the potentiality of serious complications and prolonged alveolar retention.

Lipiodol is the only medium, so far as we know, that has been studied for changes in pulmonary function following bronchographic procedures. Zavod[22] showed that 90 per cent of the 50 patients he studied showed a decrease in pulmonary volume one hour after the bronchograms had been taken. The highest loss occurred in the respiratory reserve. Daily spirometric measurements showed that the loss of function is recovered gradually over a period of five days to the pre-bronchogram level. It is possible that this phenomenon may occur with all media, whether they are oily, water-soluble, or of the newer suspension type.

Lipiodol has the disadvantage of making serial roentgenograms difficult to interpret in some instances, because the "contrast medium infiltrate" may be retained in the alveoli for long periods. The recent combination of sulfonamides with lipiodol[23] appears to serve the dual purpose of increasing the sharpness of contrast and reducing the period of retention of the dye. Undoubtedly the most consistent objection to lipiodol has been its persistent visibility on thoracic roentgenograms long after its instillation, which tends to obscure the de-

dans ces cas de procéder à la décompression du nerf.

La spondylosyndèse primaire est justifiée en présence d'une longue anamnèse de douleurs dorsales ou des jambes, avec confirmation radiologique ou opératoire d'instabilité. L'auteur pense que la spondylosyndèse intervertébrale est le procédé de choix. Dans un certain nombre de cas il a personnellement obtenu les meilleurs résultats par la méthode de double fixation des corps intervertébraux au moyen de "chevilles" osseuses. Grâce à ce procédé les soins post-opératoires, le séjour à l'opital et la période d'immobilisation ont pu être considérablement réduits. Les travailleurs de force ont pu reprendre leur travail six mois après l'opération; une employée de bureau a repris le travail au bout de trois mois.

La technique recommandée consiste en une greffe osseuse très précise, avec une évaluation exacte de l'os autogène. L'action favorable de la compression de contact sur l'ostéogénèse est utilisée dans ce type de spondylosyndèse. La perte de sang est réduite au minimum grâce à une incision limitée. Le saignement par les trous du forage osseux entre les vertèbres est minime, car il est jugulé dès la mise en place de la "cheville" osseuse. La mobilisation plus précoce est attribuée en partie à la section des filets sensibles dans le ligament longitudinal antérieur, au moment de l'excision du disque hernié.

SCHLUSSFOLGERUNGEN

Der Verfasser setzt sich für die völlige Entfernung einer verlagerten oder degenerierten Zwischenwirbelscheibe mittels umfangreicher Bloslegung zwischen den Laminae ein.

In manchen Fällen von ausgesprochener Erkrankung der Bandscheibe liegt auch eine Kompression des Nerven innerhalb des Wirbelforamens vor, wodurch sich ein Beharren des Schmerzes nach Entfernung der Bandscheibe erklärt. In solchen Fällen sollte eine Dekompression des Nerven durch Entkappung des intervertebralen Kanals erfolgen.

Eine primäre Versteifungsoperation der Wirbelsäule wird in Fällen empfohlen, wo eine lange Anamnese von Schmerzen im Rücken oder in den Beinen besteht, und wo durch die Röntgenuntersuchung oder bei der Operation eine Unstabilität festgestellt wird, die einen solchen Eingriff rechtfertigt. Der Verfasser hält die Fusion der Wirbelkörper für das Verfahren der Wahl. In seiner Erfahrung an einer begrenzten Anzahl von Fällen hat sich die Wirbelkörperfusion mit angepassten doppelten Dübeln am besten bewährt und zu einer erheblichen Vereinfachung der postoperativen Behandlung und zu einer Verkürzung des Krankenhausaufenthaltes und der Dauer der Immobilisierung des Kranken geführt. Kranke, die schwerere körperliche Arbeiten ausführen, können innerhalb von sechs Monaten nach der Operation ihren Beruf wieder aufnehmen; eine Büroarbeiterin konnte schon nach drei Monaten zu ihrer Arbeitsstelle zurückkehren.

Die vom Verfasser empfohlene Technik besteht in präziser Knochentransplantierung mit sorgfältiger Anpassung des autogenen Knochens, der natürlicherweise umso besser "einheilt," je sorgfältiger er angepasst ist. Diese Form der Fusion macht sich den wünschenswerten Effekt der Kontaktkompression auf die Knochenbildung zunutze.

Der Blutverlust ist äusserst gering, da nur ein kleiner Einschnitt an der Stelle der Knochenentnahme ausgeführt wird, der sich leicht und schnell schliessen lässt. Die Blutung von den Bohrlöchern zwischen den Wirbeln ist ebenfalls sehr gering, und der Dübel verhindert, wenn er in das Loch eingeführt und in die richtige Lage fixiert

pyridone acetic acid in methylcellulose or in peanut oil. The two combinations are now known as aqueous and oily dionosil. Their iodine content is 30 per cent and 34 per cent respectively. Aqueous dionosil differs from earlier water-soluble media in that it is an ester of low solubility in water. The suspension yields opacity equivalent to that obtained with diodrast preparations; yet it is isotonic with body fluids, so that no osmotic disturbance is caused. Elimination of dionosil from the lungs occurs within five days.[30] Animal experiments with radioactive iodine (I^{131}), labeled propyliodine, and human metabolism studies showed that the compound is completely hydrolyzed and eliminated through the kidney without breakdown of iodines or iodides. Histologic examinations of lungs excised after bronchographic studies with the dionosils have shown no serious tissue reactions.[31] Dionosil has been shown to have no adverse effect upon the tuberculous patient.[32] The most serious reported complication following the taking of dionosil bronchograms is the occurrence of mild pyrexia, occasionally accompanied by mild malaise and arthralgia. This reaction subsides spontaneously within forty-eight hours without treatment.

Present Study and Technic.—The present study is based on a review of 75 consecutive bronchograms taken with the use of lipiodol, aqueous dionosil and oily dionosil. Twenty-five consecutive bronchograms were taken with each medium. In addition, bronchograms were taken with the use of different media for the two sides. The subjects were inpatients and outpatients of the Mississippi State Sanatorium and were not selected in any way for this study.

Each patient was fasting in order to diminish nausea and the possibility of aspirating vomitus. We employ atropine, a relatively short-acting barbiturate such as pentobarbital, an opiate such as meperidine, and an antihistaminic in appropriate doses forty-five minutes before the beginning of the procedure. The oral pharynx and larynx are anesthetized with a spray of 0.5 per cent pontocaine. Using a laryngeal mirror and cannula, one then injects 0.5 per cent pontocaine in 1 cc. doses directly into the trachea until adequate anesthesia has been achieved.

Usually our initial step in evaluating the tracheobronchial tree is bronchoscopic examination. This, as recommended by Clerf,[33] affords the special advantage that a combination of diagnostic procedures is done at the same time. If bronchograms are still indicated after the bronchoscopic examination, a catheter is inserted through the bronchoscope and placed in the right main stem bronchus. If bilateral bronchograms are to be taken, the right side is always visualized first in order to obtain unobscured views of the right middle lobe, which can be seen adequately only with a lateral film. The contrast medium is then injected through the catheter, under fluoroscopic guidance, into the right side. The segments are filled by positioning the patient so that all bronchi become dependent *seriatim*. A series of roentgenograms, including the posteroanterior, the right lateral, and the right oblique view, is then taken. If the left bronchial system is to be studied and the patient has tolerated the procedure thus far, the catheter is manipulated into the lower portion of the trachea or, preferably, into the left main stem bronchus. Additional medium is then injected and, after adequate posturing, a second series of roentgenograms is obtained, including posteroanterior and left oblique views. If only the left side is studied, a left lateral film is usually obtained in addition.

In our experience, postural drainage has been of great aid in eliminating much contrast material from the bronchi. Bronchodilating drugs also seem highly valu-

2. Dermoid cysts containing bone or teeth are present.

3. Some radiopaque material is introduced into the cyst after aspiration.

This article is concerned with the last-mentioned condition. After aspiration of the fluid from the cyst, ethiodol is injected into the cyst and roentgenograms are taken — anterior-posterior, lateral and oblique views. This is not recommended when pus has been aspirated. It is interesting to locate the cyst in relation to the bladder, so the bladder is filled with 20 per cent skiodan and the pelvic roentgenograms are taken again. Now the size and location of the cyst and its relation to the bladder may be known.

Robbins,[2] Marr and Portman[3] and Snow[4] have described the diagnosis of ovarian cysts by cystograms and bimanual palpation (abdominovaginal).

REPORT OF CASE

Mrs. H. W., a 47-year-old white woman, had been married twenty-eight years. She had had 4 pregnancies, resulting in 4 living children. Catamenia began when the patient was 12 years old and was regular until a hysterectomy was performed. Her past illnesses consisted of the usual childhood diseases, pneumonia in childhood, disease of the gallbladder fifteen years prior to this examination and a duodenal ulcer from 1938 to 1943 and in 1945. Recently she had suffered indigestion with gallbladder and colon disease.

The surgical history included an appendectomy in 1945 and a hemorrhoidectomy in 1953. A complete hysterectomy and right oophorectomy were performed on Aug. 4, 1955. The diagnosis was chronic cervicitis with squamous metaplasia, late secretory endometrium and corpus luteum cyst of the right ovary.

The present illness began about the first of April, 1956, with pain in the pelvis, a feeling of fullness, shooting pains down the legs, dizziness and nausea. The patient was first examined on April 2. A cystic mass approximately 10 by 12 cm. was palpated through the vagina, posterior and to the left. On April 20 the mass and previous symptoms were present. The former was easily palpated. There was no fever and very little tenderness. Fifty cc. of dark bloody material, as observed in endometrial ovarian cysts, was aspirated by

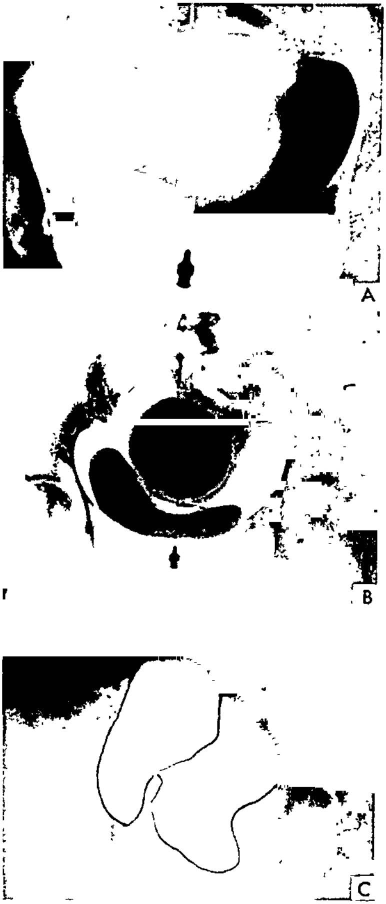

Fig. 1.—*A*, roentgenogram of ovarian cyst with ethiodol used as contrast medium. *B*, anteroposterior roentgenogram of ovarian cyst injected with ethiodol and bladder partly filled with 20 per cent skiodan solution. *C*, lateral view of *B*, showing relation of bladder to ovarian cyst.

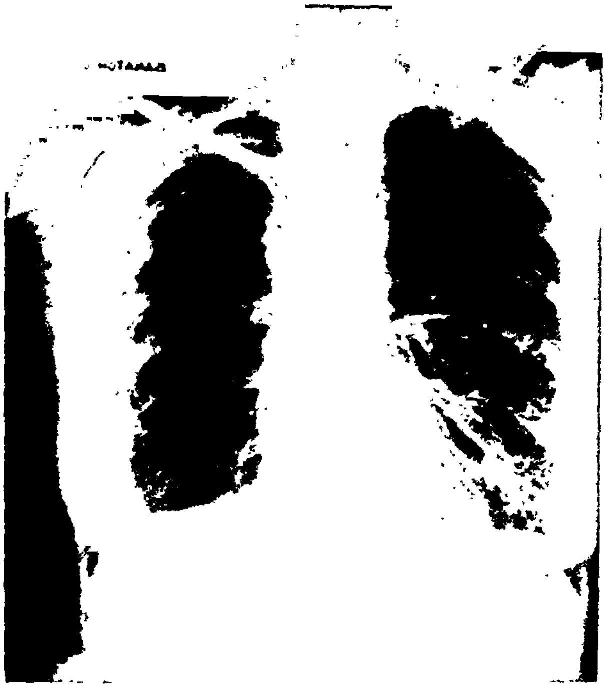

Fig. 3.—Bronchogram with aqueous dionosil in right bronchi and oily dionosil in left. Note superior contrast of oily medium.

TABLE 1.—*Overall Quality of Bronchograms*

	Lipiodol	*Aqueous Dionosil*	*Oily Dionosil*
Excellent	11	12	11
Good	10	11	12
Poor	4	2	2
Total	25	25	25

TABLE 2.—*Alveolar Filling*

	Lipiodol	*Aqueous Dionosil*	*Oily Dionosil*
None	10	14	11
Slight	10	8	9
Moderate	3	0	2
Marked	2	2	1
Interferes with Interpretation	0	1	2
Total	25	25	25

able in this regard. The patient is told not to swallow the dye but to expectorate it with each cough. Attention to such details appears to help in the prevention of complications.

With children and infants the technique is modified by using general anesthesia preceded by the appropriate premedications. Bronchographic studies of patients at such ages can be done quite satisfactorily.[34]

Results.—The overall quality of the bronchograms was judged to be excellent, good or poor, according to the clarity of demonstration of the endobronchial pathologic alterations or, in case there were none, of the bronchi themselves. Some were intentionally unilateral studies; others were bilateral.

There was no appreciable difference in the results of the three. Approximately 85 per cent in each group showed good to excellent overall results.

The dionosils coat the endobronchial mucosa uniformly and demonstrate nicely the smaller peripheral bronchi. There is less tendency to "pool" than there is with lipiodol. More care is required in securing adequate anesthesia with the dionosils, particularly the aqueous, than with lipiodol. We observed, likewise, that aqueous dionosil must be injected slowly, since it seems to be more fluid than the other media. Otherwise the bronchi are flooded with the dye, which stimulates the cough reflex and may produce respiratory embarrassment. If the patient coughs excessively with any of the media during injection, alveolar filling occurs rather promptly.

Table 2 indicates that all three media will produce alveolar filling. We observed no significant difference in the number of bronchograms showing immediate alveolar filling, nor did any one agent seem to produce a greater degree of alveolar filling than did the others. Only occasionally did it interfere with the satisfactory demoncompara con la masa tumoral inflamatoria, se extirpa y se envía al patólogo.

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No one would wish to return to the brief and hard life, the smells and squalor, of a medieval city; but the fact remains that the men of those times were able to take pride in producing, by their own skill, works of the highest quality and beauty . . . *Which all boils down to saying that they had certain incentives which are lacking today.* Or, if you prefer alternative definitions, they had motives, provocations, or spurs, that roused them to live their short lives fully. What were these motives? Firstly, as already noted, life was brief and uncertain, death came readily to the young as well as to the old, and "men feared death as children fear the dark." Secondly, work was a natural thing. As Francis Bacon said, in his *Advancement of Learning*, "But men must know, that in this theatre of men's life it is reserved only for God and angels to be lookers on." Thirdly, skill was an essential, and "He that *hath not the craft let him shut up the shop*" *to quote an ancient* proverb. Most important, the standard of workmanship was judged by fellow-craftsmen, for "a workman is known by his work." Finally, the numbers of people were relatively small, and life was lived in common, whether in town or village.

It will be noted that I have omitted the greatest incentive of all, the spiritual; not because I do not believe in it, but because no amount of academic discussion will replace it if it has been lost.

—*Banks*

RÉSUMÉ ET CONCLUSIONS

Une étude comparative a été faite concernant les qualités respectives du lipiodol et du dionisil aqueux et huileux dans les examens bronchographiques.

Le lipiodol s'est montré satisfaisant; mais on peut lui reprocher la persistance d'infiltrations du produit dans les poumons durant une période plus ou moins longue, obscurcissant les détails des lésions progressives.

Le dionisil aqueux est irritant; de plus, sur les trois produits étudiés, il a donné le contraste le moins bon.

Quant au dionisil huileux, il donne des bronchogrammes d'une qualité presque égale à ceux du lipiodol; il n'est pas irritant et s'élimine rapidement du parenchyme bronchique.

RESUMEN Y CONCLUSIONES

Se ha hecho un estudio comparativo de los méritos relativos del lipiodol, del dionosil acuoso y del dionosil aceitoso en estudios broncográficos.

El lipiodol parece satisfactorio excepto por los infiltrados persistentes del medio que queda en los pulmones por períodos extensos de tiempo, oscureciendo los detalles de las lesiones progresivas.

El dionosil acuoso demostró ser relativamente insatisfactorio, proque es irritante y porque, de los tres medios estudiados, es el que dio el contraste meno efectivo.

El dionosil aceitoso fué satisfactorio, dando broncogrammas excelentes, casi a la par de los obtenidos con el uso del lipiodol.

No era irritante y desaparecía rapidamente del parénquima pulmonar.

SUMARIO E CONCLUSÕES

Por um estudo comparativo das vantagens do lipiodol, dionosil aquoso e dionosil oleoso na broncrografia.

O lipiodol mostra-se satisfatorio exceto quanto a demora desse contraste após o exame, obscurecendo os aspectos da evolução das lesões progressivas.

O dionosil aquoso não foi bem aceito por ser irritante e porque, dos três meios de constraste estudados foi o que evidenciou menos eficiência.

O dionosil oleoso foi quasi satisfatorio permitindo excelentes broncogramas ausi identicos aos obtidos com o lipiodol. Não se mostrou irritante e sua permanencia foi breve *no parenquima pulmonar.*

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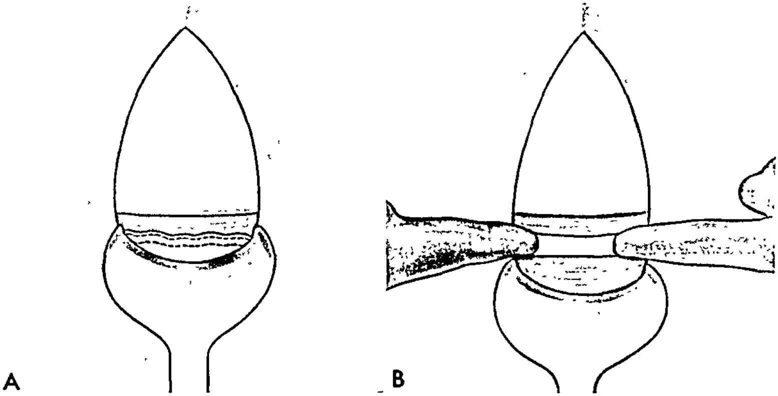

Fig. 2.—*A*, the entire posterior surface of the bladder is freed. The anterior lower uterine segment is adequately exposed below the readily visible peritoneal reflexion. *B*, entire bladder held caudad beneath the bladder retractor. The exposed lower uterine segment is opened transversely below the peritoneal reflexion.

every case there was, in my opinion, a clear-cut indication for cesarean section.

In only 1 case was frank infection present. Spinal anesthesia was used in every case. The peritoneum was accidentally opened in 4 cases—the first, second, fourth and eighth in the series. There were no immediate or delayed complications referable to the urinary tract. The first 15 patients were given prophylactic antibiotics; the last 16 were not. All but 1 had a technically afebrile postpartum course. In the first 2 cases a retention catheter was used electively for forty-eight hours after delivery. In 4 other cases single catheterization was necessary once only. In the remaining 25, postoperative voiding was spontaneous and adequate.

Before I used preliminary traction sutures at the lateral angles of the uterine incision, lateral extension occurred in 1 case, with profuse bleeding that was difficult to control. This patient, afebrile preoperatively, had been given a blood transfusion before leaving the operating room. Her case is the only one in which there was a technically febrile puerperium. The temperature was elevated on the second, third and fourth postoperative days. There were no local complications, and the patient was discharged on the seventh postoperative day. A total operating time of seventy-nine minutes was required. If this case is eliminated, the average operating time was fifty minutes, the shortest time being thirty-five minutes and the longest (the first case in the series) sixty-five minutes.

Most of these 31 patients were ambulatory within thirty-six hours or less. The

Sección en Español

Tratamiento de la Tromboangiitis Obliterante

El Papel de la Arteriectomia*

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NO existe, que sepamos nosotros, más que una sola publicación nacional, íntegramente dedicada a la enfermedad de Leo Buerger, cual es la Tesis Doctoral de Julio José Sanchez Vegas, presentada ante la I. Universidad Central en 1940 y entre cuyas 7 observaciones, no figura ninguna en la cual se haya practicado el exámen anatomo patológico de las arterias interesadas por la enfermedad.

La importante y exhaustiva Tesis de Rafael Castillo, que abarca el estudio de las arteritis de todo género (1944), cita 6 observaciones con diagnóstico de Arteritis obliterativa de Leo Buerger, de los cuales uno fue un "hallazgo de autopsia" y es el único que ostenta la comprobación anatomo-patológica.

En el documentado e importante estudio del Prof. Miguel Pérez Carreño, presentado ante la Academia Nacional de Medicina y titulado "Contribución al estudio de las arteriopatías periféricas en Venezuela," hay un Capitulo dedicado a la enfermedad de Winiwarter-Buerger, pero tampoco, al parecer, ninguna de las observaciones citadas por el autor, exhibe la comprobación histopatológica que signa la afección, de dificil diagnóstico y facilmente confundible con otra afección general arterial clinicamente muy afín, la arterioesclerosis obliterativa. En la Tesis de Castillo, así como en el trabajo del Profesor Pérez Carreño, hemos encontrado sendos casos que han provocado nuestras dudas respecto al diagnóstico.

A pesar del respeto que la opinión del ilustrado Profesor de Caracas y buen amigo nuestro nos merece, vamos a discutir, (no a negar) el diagnóstico de estos dos casos, comenzando por exponer un breve resúmen de cada uno de ellos.

Caso de Sanchez.—Obs. No. 7, pag. 78.—En mayo de 1935, dolor agudo en pierna izquierda; al cabo de unos meses, claudicación intermitente; viajó a Panamá y Nueva York, donde es tratado sin obtener mejoría.—Al exámen (nov. 1938) corazón ligeramente aumentado a la percusión, T. A. Mx. 140, mn. 100; pulso 80 p.m.; metabolismo normal; ojos: Arterioesclerosis Incipiente. Choroiditis.—Se sienten latidos arteriales. No hay atrofia del pie.—Oscilometría: indice oscilométrico: miembro izqdo. 1½; 2½; 4½ encima de maleolo, debajo de rodilla, encima de rodilla, respectivamente. Miembro derecho: ½; 3; 3½, en los mismos sitios, respectivamente.

Caso de Perez Carreño.—Obs. No. 28, pag. 581.—Enfermo de 41 años hipertenso, hemipléjico izquierdo, operado de simpaticectomia toraco-lumbar izquierda, esplancnicectomia; dolor continuo en pie izq., claudicación intermitente a pocos metros; contactos bruscos exacerban el dolor; dedos 3° y 4° amoratados

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* [illegible]

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Carcinoma of the Splenic Flexure Complicated by Pregnancy

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AND

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THE serious problem of carcinoma is still unsolved. Each year more facts are brought together, and it is reasonable to hope that the real solution of the problem is near—at least in the foreseeable future.

Malignant tumors in children and in pregnant women should be studied and recorded carefully. Carcinoma of the colon in pregnancy is a rare condition, and every case should be reported. The most common colonic location in pregnancy is the rectum and sigmoid. Only 1 case could be found in the literature in which the tumor was located above this region. This was reported by Waters and Fenimore, under the title "Perforated Carcinoma of the Cecum in Pregnancy."[1] The patient's age was 37.

A case was reported by Finn and Lord[2] in which a tertipara aged 31 had complete obstruction. At operation an annular carcinoma of the sigmoid portion of the colon was observed. After a decompression transverse colostomy the carcinoma was resected and an end-to-end anastomosis made. The patient survived three operations—colostomy, resection and closure of the colostomy.

DerBrucke[3] of Brooklyn, in an article "Intestinal Obstruction Due to Malignancy Complicating Pregnancy," reported 2 cases. In the first a primipara aged 23 complained of severe constipation. She was seven and one-half months pregnant. Roentgen study revealed pronounced distention of intestinal loops, mostly of the small bowel. The large intestine was filled with gas to the sigmoid portion of the colon and terminated at this point. Labor was induced, and a live boy weighing 2,100 Gm. was delivered. Subsequently a Mikulicz procedure was done, and the patient died eight hours later. Autopsy and specimen confirmed the presence of adenocarcinoma of the sigmoid portion of the colon.

In DerBrucke's second case a tertipara aged 36 was six months pregnant. Acute obstruction developed, and at operation a carcinoma was observed in the sigmoid flexure, with metastasis to the omentum. Biopsy of the omentum showed adenocarcinoma. After cecostomy the patient went downhill. She died two months later.

REPORT OF AN ADDITIONAL CASE

On Dec. 22, 1953, a primipara aged 24, at the full term of pregnancy, was admitted to Woman's Hospital for delivery. The patient's mother stated that during the last six weeks of pregnancy the patient's constipation had increased noticeably. She was first given petrolagar and liquid petrolatum, followed by milk of magnesia and finally by epsom salts and castor oil. She had finally resorted to the use of enemas. After her admission to the hospital the labor pains disappeared, but the abdomen was distended with gas. Three days later she was discharged. She was readmitted on December 26, in genuine labor. Spinal anesthesia was induced, and a living boy weigh-

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From the Surgical Service of Woman's Hospital, Cleveland, Ohio.

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Sintoma y Signo	*Tromboangiitis:*	*Arterioesclerosis*
Comienzo	Juventud (30-35 años)	Tardío (45-50 años)
Flebitis y edema	Presentes	Ausentes
Ulceraciones	Húmedas, profundas dolorosas	Secas, superficiales, (excepto en diábetes) excepcionalmente dolor
Radiografía	no calcificación	Calcificación
Trayecto arterial:	no tortuoso	tortuoso, desliza baja el dedo
Consistencia:	normal	arterias duras
Pulso:	raramente modificado	hipertensión frecuente
Fondo de ojo:	normal generalmente	alterado (esclerosis retiniana)

Castillo, en su Tesis antes citada, apunta lo siguiente: "Este es un exámen (el del fondo de ojo), que debe ser hecho en todos los enfermos que demuestren cualquier sintomatología respecto a insuficiencia circulatoria." "Es necesario que conozcamos que las arteritis no son enfermedades locales, sino enfermedades generales con manifestaciones locales; que una vez que un agente tóxico ha entrado en el torrente circulatorio llegará igualmente a los vasos de la retina, como a los capilares de una viscera del abdómen o del torax o a los pequeños vasos que nutren los tejidos de las partes distales de los miembros inferiores. En nuestros casos, los fondos de ojo fueron normales en los pacientes de enfermedad de Buerger y en la arteritis infecciosa." "En los casos de arterioesclerosis, el fondo de ojo nos suministró datos de esta enfermedad que coincidían con la clínica, algunas veces comprobados por la anatomía patológica; en las arteritis específicas, el fondo de ojo siempre nos suministró datos referentes a lesiones de capilaritis."

Sin pretender apartarnos del concepto ortodoxo de que la Tromboangiitis es una enfermedad general del árbol vascular, he aquí lo que apuntan Allen y Barker respecto a las lesiones tromboangiiticas de las arterias viscerales: "En casos de tromboangiitis obliterante de las extremidades, pueden desarrollarse enfermedades arteriales oclusivas de varios órganos viscerales. En muchos de los casos descritos, el diagnóstico se basó unicamente en los rasgos clínicos, y la naturaleza exacta de la lesión de las arterias viscerales no se determinó. Cuando se efectuó la necropsia, casi siempre se halló que las lesiones oclusivas de las visceras, eran mas bien de arterioesclerosis que de tromboangiitis obliterante."

Examinando las Historias de la Clínica Mayo, Hausner encontró 56 de ellas con diagnóstico de Tromboangiitis obliterativa y oclusión de las coronarias; pero la autopsia comprobó tan solo 7 casos con lesiones inflamatorias de dichas arterias.—El mismo Hausner y Allen, revisando la literatura, encuentran 34 casos de Tromboangiitis con lesiones de las arterias cerebrales; los signos clínicos de estos casos eran transitorios o permanentes y consistían en hemiplegia recurrente, episodios de confusión mental y hemianopsia; solo en 3 de estos casos se hallaron lesiones inflamatorias marcadas de las arterias cerebrales, pero esas lesiones diferían al gunos rasgos de las lesiones típicas de tromboangiitis encontradas generalmente en las arterias de las extremidades.

Por su parte, Leriche, en su monumental obra "Les thromboses artérielles," escribe textualmente: "Los accidentes cerebrales son mas raros, pero existen. Recuerdo un tromboangiitico joven que presentó una

SUMMARY

Statistical study shows that the location of cancer of the colon is the same whether the patient is pregnant or not pregnant.

A careful history of the changing bowel habits in pregnancy will help in making an earlier tentative diagnosis and a final confirmed diagnosis of carcinoma of the colon, so that early definitive treatment may be instituted.

The authors report the second proved case in which carcinoma of the colon was observed above the sigmoid colon and the first in which it occurred in the splenic flexure. The patient is the second youngest pregnant woman whose case appears in the literature with the diagnosis of anaplastic adenocarcinoma of the colon above the rectum.

RIASSUNTO

Studi statistici hanno dimostrato che la localizzazione del cancro del colon è la tessa, indipendentemente dallo stato di gravidanza o meno della paziente. Una attenta inchiesta sulle modificazioni della funzione intestinale in corso di gravidanza potrà aiutare nel tentativo di fare una diagnosi precoce, in modo di poter più precocemente istituire una terapia appropriata.

Gli autori descrivono il secondo caso documentato in cui si osservò un carcinoma del colon localizzato al di sopra del sigma e il primo della flessura splenica. Tale paziente è la seconda per età giovanile fra le gravide il cui caso è descritto nella letteratura come affetta da adenocarcinoma del colon al di sopra del retto.

RÉSUMÉ

Les statistiques montrent que la localisation du cancer du colon est la même chez les femmes enceintes ou non. Une anamnèse précise des modifications des réactions intestinales durant la grossesse permet une tentative de diagnostic plus précoce du carcinoma du colon qui, s'il est confirmé, fera bénéficier les malades d'un traitement radical également précoce.

Les auteurs rapportent le second cas avéré de carcinome du colon situé au-dessus du sigmoïde, et le premier cas dans lequel il fut observé dans l'angle splénique. Il s'agit de la deuxième femme gravide la plus jeune mentionnée dans la littérature avec le diagnostic d'adénocarcinome anaplastique du colon, au-dessus du rectum.

ZUSAMMENFASSUNG

Statistische Untersuchungen ergeben keinerlei Unterschiede hinsichtlich des Dickdarmkrebses, ob es sich um schwangere oder nichtschwangere Patientinnen handelt.

Eine sorgfältige Beobachtung der Stuhlgewohnheiten während der Schwangerschaft verhilft zu einem frühzeitigen Verdacht und früherer Erkennung und Bestätigung und folglich auch zu rascherer Einleitung energischer Behandlung eines Dickdarmkarzinoms.

Die Patientin, über die hier berichtet wird, stellt den zweiten nachgewiesenen Fall eines Dickdarmkrebses oberhalb des Sigmoideums und den ersten in der Flexura lienalis beobachteten dar. Sie ist die zweitjüngste schwangere Frau in der Literatur, bei der die Diagnose eines anaplastischen Adenokarzinoms des Dickdarms oberhalb des Rektums gestellt wurde.

SUMARIO

Estudo estatístico mostra que a localização do cancer do colo é a mesma quer se trate de paciente grávida ou não. Uma cuidadosa historia das modificações intes-

rial; hecho que nunca se presenta si se practica la arteriectomia.

2) Acción analgésica: es un hecho de observación, tanto en cirugía de guerra como en prãctica civil, la aparición de dolores, consecutivamente a la obstrucción arterial, que incluso llegan a adquirir las características de una verdadera causalgia, dolores que desaparecen con la resección del segmento arterial trombosado.

3) Suprime los reflejos arterio-arteriales vasoconstrictores patológicos, y cambia el régimen circulatorio periférico, lo que explica el regreso de las oscilaciones y el aumento de la temperatura cutánea, que tienden ambos a acercarse a la normal, debido evidentemente a la vaso-dilatación de las colaterales consecutivamente a la resección del segmento arterial obstruido.

Papel de la Arteriectomia en el Tratamiento de las arteritis, especialmente de la Tromboangiitis:

Antes de emprender la crítica de cualquier tratamiento empleado contra la tromboangiitis de Buerger, es necesario tener muy presente el carácter progresivo, lento o rápido, pero siempre interrumpido por largos períodos de calma o por lo menos de latencia, que caracterizan la enfermedad, para no atribuir al tratamiento, lo que no es sino el resultado de la evolución natural del mal.

Para la selección del tratamiento, es necesario tambien, tener en cuenta que la tromboangiitis es "una enfermedad de sistema y no de órgano": todos los componentes del sistema circulatorio son atacados por ella: las arterias, las arteriolas, las venas, el simpático vaso-constrictor. Respecto al factor etiológico, de trascendencia tambien para la aplicación de un tratamiento realmente eficaz, es lo cierto que actualmente es imposible pronunciarse definitivamente sobre él, y que posiblemente no existe un agente único causante de la tromboangiitis.

En realidad, continuan siendo ciertas las palabras del Profesor Julio Diez, cuando dice que hasta el presente, no se conoce "ningún método terapéutico que actúe directamente sobre el proceso íntimo de la tromboangiitis y pueda ser considerado por lo tanto como medicación específica," pero es cierto tambien que entre los agentes etiológicos de la enfermedad de Buerger aparece como preponderante la acción del tabaco. Silbert, Wright, etc. no han encontrado un solo caso de enfermedad de Buerger en no fumadores; Wright ha demostrado experimentalmente la acción vasoconstrictora de la inhalación del humo de tabaco y cigarrillos, la cual provoca una caida de la temperatura cutánea que alcanza una media de 5°3 C, con máxima hasta de 8°5 C, experiencias que han sido confirmadas por Maddock y Coller, Barker, Roth y otros; por el método pletismográfico, Lampson ha llegado a idénticas conclusiones. La tromboangiitis antes desconocida en la mujer, ha comenzado a hacer su aparición entre ellas, pero los casos descritos han ocurrido siempre en fumadoras.

En cuanto al mecanismo de la acción del tabaco, la verdad es que no existe tampoco conclusión definitiva al respecto: pudiera ser por acción de la nicotina sobre las glándulas suprarrenales, a cuyo favor está la hiperglicemia concomitante con la vasoconstricción desencadenada por el acto de fumar; o por acción directa sobre los centros cerebrales, sea separadamente por dos mecanismos, uno directo sobre la vasoconstricción y otro por intermedio de las suprarrenales, o bien por efecto sobre el area cerebral que controla las suprarrenales solamente; o por último, por acción directa de la nicotina sobre las terminaciones nerviosas vasculares vaso-constrictoras. Tampoco ha de olvidarse una posible acción alérgica del tabaco.

the past, the school of "let them rough it out" has had in its favor the obvious fact that many such castrated patients may have few symptoms of steroid withdrawal. It is also true that if there is an immediate postoperative storm due to the withdrawal of steroids, it may be of short duration. The basic mistake of the proponents of this starvation approach is that they are obviously concerned only with controlling menopausal symptoms. They make no attempt to treat the physiologic body economy or to protect the patient after the operation, against the statistically established[7] rapid onset of multiple degenerative disease processes.

Presuming that the vital concerns of adequately maintained steroid economy are accepted by the medical profession, surgery is still on the horns of a dilemma. Should all possible effort be made to preserve apparently normal ovarian tissue, even in a patient 60 years old, at the time some other indicated operation is performed? This is really an unsolved problem. The question highlights two opposite schools of thought as to elective oophorectomy after the essential decline of gonadal reproductive function.

In the past the rationale of elective oophorectomy was the well established fact that roughly 1 out of every 100 women past the age of 40 will die of ovarian cancer. In an attempt to combat this threat, elective oophorectomy was recommended whenever surgical opportunity arose.

At the meeting of the American College of Obstetricians and Gynecologists in December 1955, Griffith[8] presented the arguments for retaining ovarian tissue whenever surgically conceivable. He pointed out effectively the postmenopausal role of ovarian tissue in protein and carbohydrate metabolism and the obvious sex steroid protection against senile diabetes and atherosclerosis. In women who had undergone bilateral oophorectomy it was noted by Wuest, Dry and Edwards[9] that by the age of 50 a degree of coronary atherosclerosis had developed that was not reached by a control age group until after the seventieth year. These authors, describing ten-year groups, observed an incidence of severe coronary atherosclerosis from 10 to 45 per cent higher in oophorectomized women than in controls. The aforementioned interrelation of the ovaries with other members of the endocrine chain was also emphasized by these writers to strengthen further the argument for retention of apparently normal ovarian tissue, regardless of the age of the operative patient.

Although there is no question of the vital role played by the sex steroids in the aging person's basic physiologic condition, there is much room for argument as to the efficacy of elective oophorectomy. In brief, evidence now suggests that it is perfectly possible to maintain adequate physiologic body economy after a routine elective oophorectomy by means of modern steroid replacement technics. Since the weapons to combat the unfortunate results of sex steroid starvation are now available, there should be no hesitation to perform elective resection of ovarian tissue that has lost its reproductive significance. Thus, protection against carcinoma of the ovary is available without prejudice to body economy.

The rationale of the theory in favor of "puberty-to-grave" sex steroid support is the complete conviction that steroid support is of vital concern throughout the aging span of human existence. The combination technics recently described,[10] employing an androgen-over-estrogen ratio of 20:1; have successfully answered the steroid replacement demand. This type of replacement therapy can certainly be instituted after elective oophorectomy, even at the age of 40, as well as after a physiologic menopause at the age of 50. Economically these technics have come within the

su gravedad son infinitamente mayores. Ademas, es susceptible de la misma objeción que se le puede hacer a la arteriectomia, es decir, que puede llegar hasta curar el fenómeno local, pero que no tiene influencia alguna sobre la enfermedad en sí.

Tal vez sea factible tambien, con el material plástico actualmente usado para el tratamiento de los aneurismas arteriales, emprender experiencias e intervenciones para reemplazar el segmento arterial trombosado, sobre lo cual no he encontrado dato alguno en la literatura revisada;[1] pero la objeción presentada a propósito de la arteriectomia, conserva en este caso, todo su valor.

De todos modos, es condición imprescindible para dos Santos, antes de emprender estas intervenciones, gangliectomias y adrenalectomias en un arterítico, practicar previamente:

1) la arteriografía, que nos ilustra sobre la circulación colateral y sus características,
2) la infiltración novocaínica del simpático, que nos suministra una idea de la respuesta de la inervación periférica a la intervención. En rigor esta infiltración podría reemplazarse por el uso de los gangliopléjicos.

En resúmen pues, nosotros creemos que el tratamiento quirúrgico de un tromboangiitico debe comenzarse por una arteriectomía del segmento trombosado, tan amplia com sea posible, lo cual nos reporta las siguientes ventajas:

1) mejoría del paciente por vaso-dilatación colateral;
2) posibilidad de un diagnóstico de certeza por el exámen histopatológico de la pieza;
3) posibilidad de practicar posteriormente una intervención de mas aliento (Diez, von Oppel) si los resultados de la arteriectomia, combinados con la supresión del cigarrillo y algún tratamiento médico adyuvante, se muestran insuficientes en sus resultados.

Porque, en nuestro concepto, el tratamiento debe ser mixto, es decir, médico y quirúrgico. Como primera medida, condición *sine qua non*, la supresión absoluta y definitiva del tabaco; en seguida los pequeños medios higienicos consistentes en el cuidado de manos y pies, correcto tratamiento de las dermatofitosis, el reposo en cama, etc., el empleo de los vaso-dilatadores, desde el alcohol, la papaverina, los extractos pancreáticos desinsulinizados, hasta los medios físicos (calor húmedo, etc.), y los gangliopléjicos; los ejercicios musculares sistematizados por Buerger; las soluciones salinas hipertónicas preconizadas por Silbert y el citrato de sodio, algún tanto en desuso actualmente; la proteinoterapia inespecífica con vacuna tifoidea, enfáticamente recomendada por Wright, y usada ampliamente por este autor, Brown, Allen y colaboradores, y cuyo valor, al decir del mismo Wright ha sido definitivamente establecido.

Si no existe el acuerdo perfecto sobre el empleo de los vaso-dilatadores generales del tipo del priscol o de la padutina, por la consideración, tal vez algún tanto teórica de que debido a la vaso-dilatación general del sistema por ellos producida habría una disminución relativa de la volemia en los vasos menores y por lo tanto una mayor isquemia a nivel del territorio correspondiente a las arterias comprometidas por la enfermedad, amen de la vasoconstricción reaccional consecutiva que afectaría tambien los vasos dañados, incrementando la oligoemia a su nivel, en cambio el acuerdo es perfecto cuando se trata del empleo de los gangliopléjicos.

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[1] Despues de leido este trabajo ante la Sociedad Medico-quirurgica del Zulia, hemos recibido el N° de Abril de Surgery, Gynecology and Obstetrics, en el cual los Dres. Eddwards y Tapp en un articulo titulado "Peripheral artery replacement with chemically treated nylon tubes" (Surg., Gynec. & Obst., 102, 4, April '56, 443-449) relatan tres casos de trombosis arterial (no precisan la causa), tratados por injertos de nylon, con excelentes resultados hasta el momento.

arteries. By careful dissection it was removed almost *in toto,* only an extremely small portion remaining over the left iliac artery. All raw surfaces were peritonized, and the abdomen was closed in layers.

The attending pediatrician expressed the opinion that the development and condition of the babies were so good that no incubation or special attention was needed. The weight of the intrauterine baby was 4 pounds and 6 ounces (1,984 Gm.) and that of the intra-abdominal was 4 pounds and 15 ounces (2,693 Gm.). Both were girls.

The mother's postoperative course was smooth, with no elevation of temperature beyond 100 degrees. Both mother and infants were discharged from the hospital on the eighth day and have progressed normally since.

SUMMARY

A case is reported in which simultaneous abdominal and intrauterine pregnancies existed in a 23-year-old primipara. The patient was delivered by cesarean section, and the intrauterine fetus proved normal and healthy. Since there was no other fetus within the organ, the incision was enlarged, revealing a membranous sac resembling a second uterus. This was recognized as primarily an abdominal pregnancy. The sac was opened and a second normal child delivered, crying spontaneously. Both infants were girls. No incubation was required for either, and the mother also did well. All three were discharged from the hospital in good condition on the eighth day after the birth.

ZUSAMMENFASSUNG

Es wird über einen Fall von gleichzeitig bestehender uteriner und Bauchschwangerschaft bei einer 23järigen Erstgebärenden berichtet. Die Entbindung erfolgte durch Kaiserschnitt, und es fand sich in der Gebärmutter ein normaler und gesunder Fötus. Da kein zweiter Fötus im Uterus war, wurde der Einschnitt verlängert, und es zeigte sich ein membranartiger Sack, der einer zweiten Gebärmutter ähnelte. Es stellte sich heraus, dass es sich um eine primäre Bauchschwangerschaft handelte. Der Sack wurde eröffnet, und ein zweites normales Kind, das spontan zu schreien begann, wurde entbunden. Keines der Kinder erforderte Unterbringung im Brutofen, und das Befinden der Mutter war gut. Die Entlassung der Mutter und beider Kinder erfolgte in gutem Gesundheitszusstand am achten Tage nach der Entbindung.

RÉSUMÉ

L'auteur rapporte un cas de grossesse à la fois abdominale et intra-utérine chez une primipare de 23 ans. La césarienne a montré un foetus intra-utérin normal. L'incision fut élargie et fit apparaître un sac membraneux contenant un second foetus normal, criant spontanément. La mère et les deux nouveaux-nés ont pu quitter l'hôpital en bonne santé huit jours après la naissance.

RIASSUNTO

Viene riferito un caso di gravidanza addominale e intrauterina simultanea in una donna primipara di 23 anni. La paziente fu sottoposta a taglio cesareo: il feto intrauterino era vivo e normale, ma poichè non vi era alcun altro feto nell'utero la incisione fu allargata rivelando un sacco membranoso simile ad un altro utero. Si trattava di un'altra gravidanza, ma in sede addominale. Anche questo sacco venne aperto e conteneva un feto vivo, che si mise subito a piangere. Non fu necessaria la incubatrice, e anche la madre stava bene, cosicchè furono dimessi tutti tre dall'ospedale dopo 8 giorni.

peratura superficial de los pulpejos de extremidades normales sube hasta 4-6 F°; en una extremidad enferma, el alza de la temperatura cutánea está influenciado por el grado de oclusión del sistema arterial del miembro, inclusive los colaterales.

Si 5.000.000 de organismos son incapaces de producir fiebre, se aumenta la dosis hasta 8 o 10.000.000 y se mantiene esta dosis hasta tanto la respuesta es satisfactoria. Cuando la dosis anterior es insuficiente, se aumenta de 3 a 5.000.000. Cuando la temperatura sube más allá de 103 F° (39½ C° mas o menos) o si se presenta un escalofrio, la dosis siguiente se reduce en "3 a 5.000.000" de organismos. Han sido suministradas dosis de 200.000.000 y más, pero con la mayoría de los pacientes la dosis máxima alcanza de 70.000.000 a 130.000.000 y esta dosificación puede continuarse indefinidamente. Procediendo cuidadosamente de esta suerte, no hemos tenido efectos desagradables imputables con seguridad al tratamiento. Durante las infecciones agudas intercurrentes u otras enfermedades graves, se ha suspendido el tratamiento. Este tratamiento se continúa por dos o tres meses después de la completa cicatrización de los ulceraciones (Wright, loco citato).

Los resultados de este tratamiento, según Wright, han sido altamente satisfactorios, obteniéndose el alivio del dolor despues de la segunda o tercera inyección y la rápida cicatrización de las lesiones. Los procesos gangrenosos, como es natural, responden más despacio, e incluso se registran algunos escasos fracasos, pero los resultados han sido en general, más beneficiosos con la vacunoterapia, que con cualquier otro medio de tratamiento endovenoso. La vacuna tifoidea no parece tener influencia alguna sobre el sindrome de claudicación intermitente.

En resúmen, pues y como conclusión de las consideraciones anteriormente expuestas, proponemos sistematizar por via de estudio, el tratamiento de las arteritis tipo Winiwarter-Buerger, en la forma siguiente, que constituye una especie de escala ascendente:

1) supresión del tabaco, pequeñas medidas higiénicas, gangliopléjicos, ejercicios tipo Buerger, etc.
2) arteriectomia, aprovechando para practicar el exámen histi-patológico, que nos dará el diagnóstico preciso;
3) vacuna ántitifoidea, gangliopléjicos, infiltración novocaínica, tratamiento sintomático;
4) operación de Diez;
5) operación de von Oppel;
6) excepcionalmente, amputación.

En seguida insertamos un extracto de la Observación clínica que ha servido de base al artículo anterior:

Hospital de Chiquinquirá-Maracaibo, Venezuela—Historia n° 9.179-Sala Rendiles-Cama 1-Ingreso: 8 diciembre 1954—Nombre: A. G., soltero.—Se trata de un paciente de 21 años, natural de San Francisco, limpiador de automóviles; antecedentes hereditarios y personales sin mayor importancia; fuma un paquete de cigarrillos diariamente.

Ingresa por dolor intenso en los tres dedos internos del pie derecho y pantorrilla del mismo lado; hace tres meses presenta claudicación intermitente; ultimamente, dolor en reposo hace tres semanas aparece pequeña ulceración en cara plantar dedo gordo derecho.

Al exámen clinico, paciente de 1,66 de talla; 49 k. peso; T. A. Mx 110, mn 80; pulso 108; temp. 37° C; resp. 17 pm.—Aspecto general enfermizo, tez pálida; dolor intenso en garganta del pie derecho y tres primeros dedos; posición del miembro colgante. Pie derecho edematoso, pierna atrófica, masas musculares hipotónicas; en el dorso del pie derecho, zona irregularmente triangularde base distal, de color pardo negruzco a trechos vilácea, con flictenas; una linea precisa separa esta

The position of function of the hand is that of slight extension of the wrist, slight flexion of the fingers and adduction of the thumb.

D. *Neurotrophic Changes*: These often occur early, and one must be alert to recognize them and institute treatment immediately. These changes will be alluded to later.

Specific Injuries.—Generally speaking, most fractures of the phalanges and metacarpals are treated in outpatient dispensaries or in the course of office practice, with little regard to fundamental principles. Yet in the treatment of any fracture nothing compares with proper reduction and adequate, prolonged immobilization until union has been effected.

Mallet Finger: Injury to the distal phalanx is one of the most difficult to treat. The posterior articular facet is detached, or the extensor tendon has been ruptured, giving rise to the so-called dropped finger, which in women constitutes a major deformity. Treatment ranges from conservative handling to radical surgical intervention.

Conservative measures consist in the application of any external appliance that will maintain the distal joint in hyperextension. The surgical treatment consists in open reduction with suturing or the use of intramedullary fine wires.[5] Lately a unique procedure has been proposed by Hillman,[6] in which hyperextension of the distal joint is maintained by means of silk sutures placed in mattress fashion through the pulp and the finger nail, then drawn out and sutured to the soft tissues on the dorsums of the fingers just distal to the proximal interphalangeal joint.

There appear to be many objectionable features in all of these methods of treatment. Splints and external appliances are often clumsy and may lead to soft tissue necrosis. The use of intramedullary pins is also fraught with danger, and it has been my experience that when they are used the range of motion in the distal joint is never regained. For the past five years I have made use of an external splint and have been gratified with the end results. A short Lewin[7] splint is used, and drill holes are placed on both medial and lateral edges. The splint is then heat-sterilized, and, prior to its application, heavy silk sutures are placed on the medial and lateral side of the finger through all the soft tissue layers between the distal and the proximal interphalangeal joint. After this the splint is well padded and placed upon the digit. The digital joint having been placed in hyperextension, sutures are threaded through the prepared holes and tied, then wound about the splint. The splint is then further reinforced with ordinary adhesive "moleskin." It remains in place for six weeks.

This procedure obviates the necessity of changing the splint at intervals and also prevents the patient from removing the splint.

Fracture of the Middle Phalanx: The treatment of this fracture depends on the site of insertion of the tendon of the flexor digitorum sublimis. Fracture proximal to the insertion of this muscle causes a dorsal bowing deformity and can be reduced and maintained by means of straight splint. Fracture distal to the insertion of this muscle produces the opposite deformity, anterior bowing. Reduction is simple and is done by maintaining the middle joint in approximately 45 degrees of flexion. A simple method of accomplishing this is to use a dorsal molded plaster splint that encases the hand to permit freedom of the wrist. I have never found it necessary to use skeletal traction or intramedullary fixation in the treatment of this fracture.

Fracture of the Proximal Phalanx: Fracture of this phalanx causes a V-shaped deformity, as a result of action of the inter-

Evolución: Se inició el tratamiento con alocaina (novocaina) endovenosa a dosis creciente; tromexan; penicilina-estreptomicina; priscol oral, sin obtenerse mejoria. El 14-12-54 se inicia tratamiento con Bistrium; se tentó la susceptibilidad del paciente con 0,2 cc. intramuscular; a los 30 m. 0,4, de alli en adelante 1 cc. c/. 8 hs.—Se continuó la penicilina-estreptomicina, tromexan; metionina, cinaronk.—Control del tiempo de prtrombina: 16".

Durante este lapso hubo necesidad de emplear frecuentemente Demerol para aliviar los dolores del paciente; el estado local del miembro afectado permanecia sin variación apreciable.

23-12-54: Se practica arteriografia (Fig. 4) y se aprovecha la herida operatoria para hacer una simpatectomia perifemoral (Dr. Fernández Auvert). El paciente experimentó leve mejoria, incluso con modificación levemente favorable de la curva oscilométrica, mejoria que sinembargo durósolo dos dias. Se practicaron inyecciones endoarteriales de priscol-papaverinassin que el estado del paciente se modificara favorablemente de manera apreciable.

29-12-54: Arteriectomia de la poplitea (Dr. Hernández d'Empaire). Se extirpa segmento artreial trombosado de unos 6 cms. de longitud y se remite la pieza operatoria al Laboratori de Anatomia patológica.

Informe del anatomo-patólogo—(Prof. Gerhard Franz)—Biopsia No. 2216/54:

Exámen macroscópico: Fragmento de un vaso con el aspecto de una arteria y con 2 cms. de longitud y 0,8 cms. de espesor. La luz está aparentemente obliterada por un tejido gris-marron.

Exámen microscópico: Arteria de tipo muscular obliterada por un tejido fibroso rico en vasos y pobre en células que muestra ocasionalmente algunos gránulos de hemosiderina. La elástica interna está bien conservada, se presenta ondulada y muestra en algunos sitios una duplicidad. No se observan procesos inflamatorios evidentes en las capas del vaso. La capa adventicial se presenta fibrosa. Tampoco se aprecian las alteraciones que se encuentran en una arterioesclerosis, como hialinosis de la intima, focos ateromatosos en la misma, fibrosis y calcificación de la capa media.

Diagnóstico: Tromboangiitis obliterante (v. Winiwarter-Buerger; Fig. 5).

Despues de la arterectomia se continuó el tratamiento con penicilina-estreptomicina, Roniacol, Vitamina B_{12}; Testosterona y Vitamina E. Hasta el 2-3-55 el enfermo experimentó gran mejoria funcional y fisica, para volver luego a presentar la misma sin tomatologia, especialmente dolor intenso, de predominio nocturno. Los latidos arteriales no habian sufrido modificación.

18-3-55: Se inicia tratamiento con vacu-

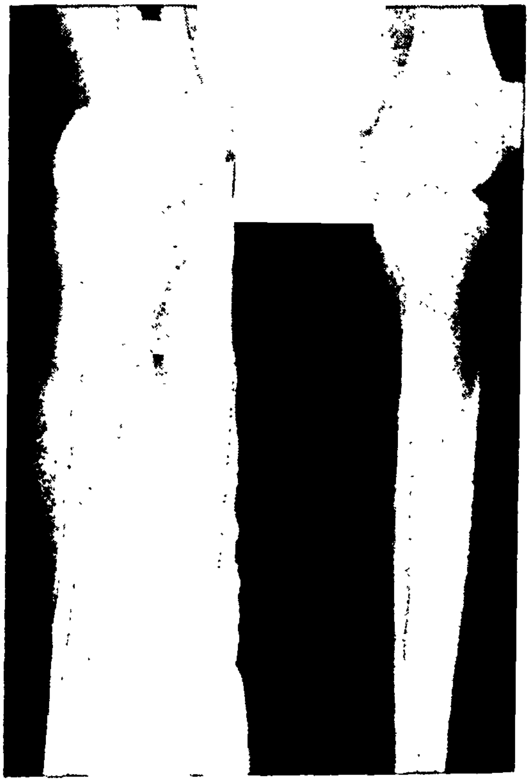

Fig. 4.—Arteriografia el 23-12-54.—Puede verse la brusca interrupción de la poplitea, por encima del condilo interno; colaterales bien desarrollados.

usually is no displacement of the fragments. In the occasional fracture of the proximal third with pronounced displacement, difficulty may be encountered in reduction.

Reduction and immobilization of this fracture may be either conservative or radical. Conservative treatment consists in immobilization of the wrist in 30 degrees of extension and slight radial deviation. This immobilization is obtained by using a snug plaster cast[12] extending from below the elbow to the middle third of the hand and including the thumb up to the distal joint, the thumb being placed in slight abduction and volar flexion. Radical therapy consists in exposure of the fracture site and immobilization by metallic fixation.[13] When the fracture occurs through the proximal third and there is difficulty in maintaining position, it is suggested that the proximal fragment be surgically removed and that this be followed by immobilization for at least six weeks.

The conservative treatment of fracture through the middle third requires a long period of immobilization, during which the patient can carry on active motion of the fingers and the distal joint of the thumb. It is often necessary to change the cast during this period. Immobilization should not be dispensed with until union can be proved by roentgen studies. It has been my practice to maintain immobilization for sixteen weeks before a check-up roentgen examination is done. Since 1954, 10 fractures of the middle third have been selected for surgical intervention. The fracture was exposed over the dorsum of the wrist and inspected, then fixed by means of a lag screw.[13] I have encountered a good deal of difficulty in the fixation of a majority of such fractures. Theoretically the procedure seems simple; practically, however, difficulty has been encountered in handling the proximal fragment. On two occasions, when the lag screw was inserted, comminution of the proximal fragment occurred. In 3 cases there was pronounced absorption about the lag screw with cyst formation, leading to early nonunion. In 3 of the remaining 5 cases absorption at the fracture line occurred, with shifting of the navicular bone; this caused prominence of the screw and required its removal. In the 2 remaining cases union occurred when the treatment was supplemented by plaster cast fixation. This method, though apparently attractive (in that one depends upon internal fixation without external immobilization), is difficult and fraught with danger; it requires most careful technic and after-care. It is hoped, however, with continued treatment and investigation of this fracture, that an improvement in the end results may be obtained by internal fixation with or without external immobilization. At present, however, it would appear that the best results are still obtained by immobilization prolonged until union occurs. This long period of disability and the economic loss related thereto may seem a high price to pay even for a good result.

Complications and Sequelae.—Compression of the Median Nerve: Compression of the median nerve in the carpal canal can occur as result of injury to the wrist. This compression causes numbness, tingling and painful burning of the fingers over the area supplied by this nerve. In some instances this is followed by weakness, sensory loss and atrophy of the thenar eminence. Restriction of movement of the flexor group of tendons is often present. Compression can take place with or without fracture of the bones that make up the wrist joint; often it follows a single injury, or occurs in persons engaged in an occupation requiring a great deal of motion of the wrist.[14] When it is the result of trauma, the treatment is surgical and consists in division of the transverse carpal ligament.

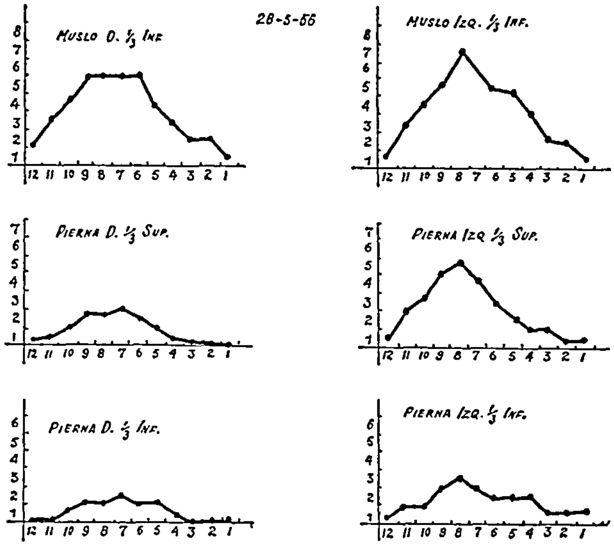

Fig. 7.—Oscilometria el 28-5-56, un año despues de la arteriectomia y vacunoterapia: la curva oscilométrica se mantiene sensiblemente a los mismos niveles alcanzades hace un año.

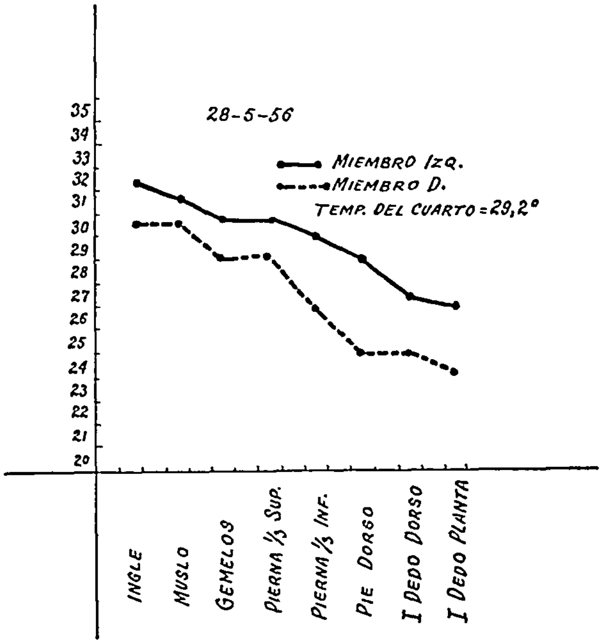

Fig. 8.—Termometria (Termómetro UMA) el 28-5-56, un año despues del tratamiento.

vención pudo notarse que los tejidos sangraban como en un caso normal. Tratamiento subsiguiente: Vitamin E, Vitamin B_{12}, Padutina en comprimidos, Hidergina sub-lingual.

En las Fig. 7 y 8 pueden observarse las curvas oscilométrica y termométrica tomadas el 28-de mayo de este año, es decir, mas de una año despues del tratamiento; las Fig. 9, *A* y *B*, son fotografias del aspecto del pie en la misma época, en que el enfermo fué presentado a la Sociedad Médico-Quirúrgica del Zulia, en la oportunidad de la lectura de la presente observación.—En esta oportunidad, el exámen de fondo de ojo fué normal.

Damos las gracias al Dr. L. Antonorsi por los exámenes de fondo de ojo y al Dr. Gerhard Franz, Profesor de Anatomia Patológica de la Universidad del Zulia por su excelente estudio de la pieza operatoria y por su amable colaboración en la obtención de fotografias y microfotografias.

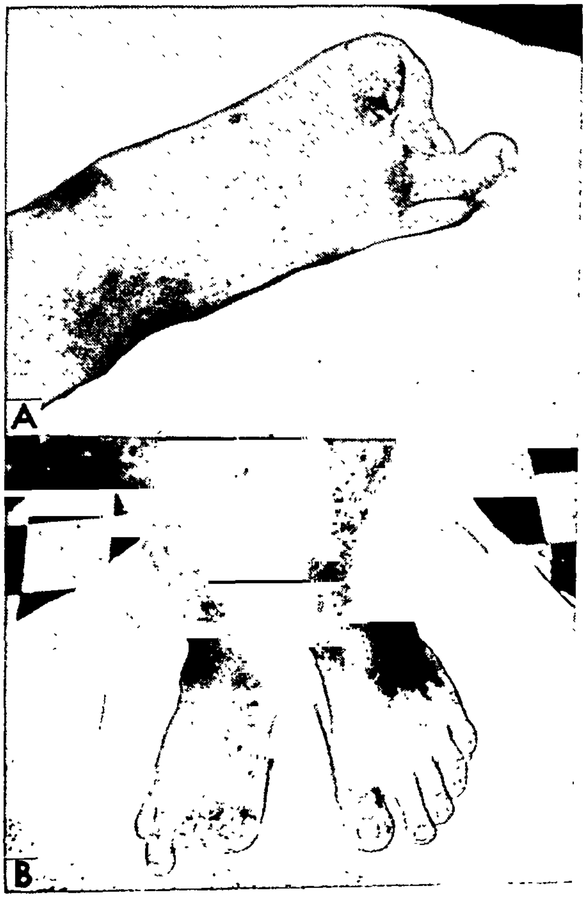

Fig. 9.—*A*, fotografia del resultado final (cara dorsal del pie afectado). B, fotografia de cara dorsal de ambos pies, notese el relieve venoso en el pie sano.

blocking agents, physical therapy is instituted (application of heat, together with gradual increase in active motion). Clinical recovery occurs long before reossification of the bones has taken place, so that one must not base the time of recovery upon the changes that occur in the roentgenograms. There is no short cut in treatment, and treatment requires the combined efforts of the surgeon, the patient, the physical therapist and often the occupational therapist.

CONCLUSIONS

A plea for conservatism in the treatment of injuries to the small bones and attendant structures is made. Although fractures and injuries of long bones and other major structures may appear more spectacular and dramatic, injury to a small bone requires just as much care, combined with a complete understanding of anatomy and pathologic physiology. A plea is also made for a more conservative attitude as regards surgical intervention. Although internal fixation in the hands of the few has produced good results, only those with complete training in this field should attempt it.

The role of the articular disc as an important factor in wrist disability is emphasized, and a treatment for this type of derangement is advanced.

Complications and sequelae of injuries to the small bones and attendant structures require alertness and demand early and proper intensive treatment.

CONCLUSIONES

Se hace énfasis acerca de la tendencia conservadora en el tratamiento de trausmatismos de pequeños huesos y estructuras dependientes. No obstante que los traumatismos y fracturas de los huesos largos y de otras estructuras mayores parecen más espectaculares y dramáticas, los traumatismos a los pequenos huesos requieren el completo conocimiento de la anatomià y fisiológia patológica. Se hace énfasis tambien sobre una decisión conservadora acerca de la intervención quirúrgica. No obstante que la fijación interna ha dado buenos resultados en manos de algunos, son procedimientos que solo deben emplearlo los que tengan un conocimiento completo al respecto. Se enfatiza el papel del disco articular como un factor importante en el desarrollo de incapacidad de la muñeca y un tratamiento para este tipo de desarreglo se menciona.

Las complicaciones y secuelas de los traumatismos a los pequeños huesos y estructuras dependientes requiere agudeza de criterio y exige un tratamiento intensivo apropiado y temprano.

CONCLUSOES

Estebelece uma tendencia conservadora no tratamento das lesões dos pequenos óssos e estruturas vizinhas. Apezar de aparentemente espetaculares e dramaticas as lesões do ossos longos tambem os traumatismos dos pequenos ossos exigem o mesmo cuidado e conhecimento completo da anatomia e da fisio-patologia. A fixação intra medular que tem dado bom resultados a poucos cirurgiões so deve ser utilizada por quem dispõe de solidas bases do assunto. Salienta o papel do disco articular no desenvolvimento da estabilidade do punho, propondo um tipo de tratamento para sua patologia. As sequelas e complicações das lesões dos pequenos ossos e estruturas adjacentes demanda vigilancia e requer tratamento precoce e intensivo.

SCHLUSSFOLGERUNGEN

Der Verfasser tritt für eine konservative Form der Behandlung von Verletzungen kleiner Knochen und der anliegenden Gebilde ein. Die Brüche und Verletzungen

Verfasser betonen ferner den Wert histologischer Untersuchung, die zu einer endgültigen Diagnose führt.

Es wird auf die günstigen Ergebnisse einer kombinierten Behandlung mit der Lericheschen Operation und der Verabreichung von Typhusvakzinen, wie von Wright und anderen empfohlen wird, hingewiesen.

Als experimenteller Behandlungsplan der Bürgerschen Krankheit wird das folgende schrittweise Vorgehen vorgeschlagen:

1. Arterienresektion und histologische Untersuchung.
2. Verwendung von Typhusvakzinen, Infiltration der Ganglien mit Novocain, symptomatische Behandlung.
3. Diezsche Operation (Resektion des lumbalen Sympathikus).
4. Von Oppelsche Operation (Resektion der Nebennieren).
5. Amputation in Ausnahmefällen.

SUMARIO

Os autors discutem o lugar da *arteriectomia* no tratamento da doença de Winiwarter-Buerger, salientando seus benefícios, que dependem da supressão dos reflexos vasoconstrictores patológicos arterio-arteriais. Isto melhora a circulação no membro. Salientam também as vantagens do exame patológico, que proporciona um diagnóstico definitivo.

Os bons resultados obtidos combinando-se a operação de Leriche com a administração de vacina tifoidea, conforme é aconselhado por Wright, e outros, são apresentados.

Propõe-se que a doença de Buerger seja experimentalmente tratada em um gradiente, como se segue:

1. Arteriectomia e exame patológico.
2. Uso de vacina tifoidea, gangliopexicos, infiltração ganglionica de procaina, tratamento sintomático.
3. Operaçãode Diez (simpatectomia lombar).
4. Operação de Von Oppel (supprarrenalectomia).
5. Excepcionalmente, amputação.

SUMMARY

In this paper the writers discuss the place of *arteriectomy* in the treatment of Winiwarter-Buerger's disease, emphasizing its benefits depending on the suppression of the arteriol-arterial pathologic vasoconstrictor reflexes which brings a betterment of the limb circulation; they emphasize likewise the advantage of the possibility of performing a pathologic examination which gives a definite diagnosis.

It also deals with the good results obtained in combining the Leriche's operation with the administration of typhoid vaccine, as advised by Wright and by Allen and others.

It is proposed to treat the Buerger's disease in an experimental way, in a gradient as follows:

1) arteriectomy and pathological examination.
2) typhoid vaccine, ganglioplexics, procain ganglionic infiltration, symptomatic treatment.
3) Diez' operation (lumbar sympathectomy).
4) von Oppel's operation (suprarrenalectomy).
5) exceptionally, amputation.

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Chronic Nonspecific Inflammation.—Chronic nonspecific inflammation of the mouth, pharynx and larynx is common and may be due to a number of factors. Mouth breathing, hot spicy foods, alcohol, dry or dusty air or infection of the nose and sinuses may contribute to this condition. Subjective complaints may be absent; when present, they may include dryness and burning of the mouth and throat, postnasal discharge, hoarseness and cough. The objective signs of chronic inflammation are hyperemia, edema and thickening of the mucosa. Hyperemia is most common. The color of the mouth and pharynx varies so much that it is difficult to decide what is normal and when disease is present. Proetz[2] encountered great disagreement among different observers as to what constitutes a "red throat." The normal appearance of the vocal cords is more constant; in the mirror they normally appear as flat white bands. Hyperemia, thickening and edema are more obvious. Chronic inflammation of the palate, pharynx and larynx is commonly present in persons who have smoked for years, even though no other cause is evident. The symptoms and signs do not seem serious enough to insist on or to compel the patient to stop smoking; one does not often have the opportunity, therefore, to determine whether this causes improvement in the appearance of the throat. An opportunity occurs at times when the patient has stopped smoking for some other reason, and in such instances a decrease in the signs of chronic inflammation is noted.

Those conducting histopathologic studies have recently noted that chronic inflammation of the respiratory epithelium is more common in smokers than in nonsmokers. Ryan, McDonald and Devine[3] examined sections of 52 larynxes removed at autopsy. They were from male cadavers, 40 to 60 years old at the time of death, with no known laryngeal disease. In the smokers there was greater thickness of the surface epithelium, due partly to excessive keratinization but mainly to hyperplasia. There was also greater round cell infiltration, edema and squamous metaplasia in the smokers than in the nonsmokers. Auerbach and his co-workers[4] made similar studies on the mucosa of the tracheobronchial tree in 41 persons. They encountered basal cell hyperplasia much more commonly in smokers than in nonsmokers. Stratification and squamous metaplasia were also slightly more common in smokers.

Considered together, the laboratory and animal studies on tobacco smoke, the subjective and objective symptoms observed in smokers and the recent histopathologic studies, there would seem to be convincing evidence that excessive smoking for long periods commonly results in chronic inflammation of the respiratory tract.

Polypoid Degeneration of the Vocal Cords.—In 1950 Myerson[5] described polypoid degeneration of the vocal cords as a clinical pathologic entity directly due to smoking. In his study of 143 patients he noted that the first stage was edema of the cords (Fig. 1*A*). This was followed by the development of smooth rounded polypoid masses or tumors (Figs. 1, *B*, *C* and *D*, and 2*A*). They were freely movable because of the thin sessile attachment. Histologically these tumors were edematous fibromas. The epithelium varied somewhat but usually was the normal stratified type of the free edge of the cord. The bulk of the tumor consisted of fibrous tissue in an edematous stroma (Fig. 2*B*). Myerson postulated that the local irritation of smoking first results in an outpouring of serum into Reinke's space. As a result of this chronic edema there was increased fibrosis, and finally a polypoid tumor developed.

This type of laryngeal tumor has been described by other observers under the terms "polypoid corditis," "chronic [illegible]

Editorial

Heroism In Hungary

SEVERAL years ago, foreseeing with tragic clarity the inroads being made by Soviet Communism among the free nations of the world, I felt it incumbent upon me, as Founder and Secretary General of the College and Editor of the *Journal* and the *Bulletin*, to make a positive protest.

For this I was criticized by some. I was told that "peaceful coexistence" with world communism was not only possible but the only thing that could save us from being engulfed altogether. I cannot help wondering, therefore, what my overoptimistic critics will think of the following excerpts from a letter I have just received from Dr. M. Arthur Kline, who is attached to the American Embassy in Vienna and is Secretary of the American Medical Society there. At present, in cooperation with Austrian surgeons of the first eminence, including Profs. Felix Mandl and Leopold Schönbauer, Dr. Kline is all but submerged in Hungarian rescue work. He writes:

"We are in a state of turmoil here. . . . The situation in Hungary is so heartrending as to defy description. I have been on the border several times, delivering medical supplies and receiving convoys of women and children from the diplomatic missions in Budapest. . . . Murder, devastation, misery and rape are being sown throughout the land. The sanctimonious swindle of Russian "coexistence" has been exposed for the myth it has always been. Tragically, millions of Hungarians are now paying a macabre price for revealing the true nature of these Russian barbarians.

"You have every reason to be proud of 'Chapter Austria.' All of us, particularly Profs. Mandl and Schönbauer, are literally tearing ourselves apart to help the Hungarians however we can. I have given all my medical supplies and equipment to the Austrian Red Cross; one day after the revolution started, I brought them personally to the border to assure that they were distributed into the proper hands. Prof. Mandl was magnificent in organizing the distribution of medical supplies to Hungary . . . In my office as I write there are two of the more than thirty Hungarian doctors and surgeons who came to Vienna to obtain medical supplies for their hospital units in Hungary, but have been prevented from returning by Russian troops on the border. These poor colleagues are in a desperate plight, completely cut off from their families and their profession and reduced to the status of refugees in improvised refugee camps . . . I have appealed to our Embassy, but unfortunately there are no funds available, as all direct aid from the United States is turned over to the International Red Cross, which here is unfortunately poorly organized; it would seem that the Communist elements in Hungary are receiving the major portion of those supplies . . . I do hope that eventually we can come up with some sort of direct aid, for these colleagues deserve it."

This, the report of an eye-witness to what is going on in Hungary today, should open the eyes of others who, up to this point, have preferred to keep them closed. As some perspicacious journalist has late-

des Gaumens und des Kehlkopfes wird als eine Folge des Rauchens angesehen.

Die Leukoplakie ist häufig ein Vorläufer des Krebses. Eine neure Überprüfung eines umfangreichen Materials führt zu der Schlussfolgerung, dass übermässiges Rauchen eine wichtige ursächliche Rolle in der Entstehung des Kehlkopfkrebses spielt.

RÉSUMÉ ET CONCLUSIONS

Les études de laboratoire et l'expérience clinique ont révélé que la fumée du tabac est irritante pour les muqueuses respiratoires.

Les inflammations chroniques non-spécifiques de la cavité buccale, du pharynx et du larynx, ainsi que la dégénérescence polypoïde des cordes vocales, sont courantes chez les gros fumeurs.

La leucoplasie de la bouche, de la langue, du palais et du larynx est considérée comme résultant de l'abus du tabac.

La leucoplasie est un précurseur du cancer. Il ressort d'études récentes que l'abus du tabac est un facteur causal important du cancer du larynx.

RESUMEN Y CONCLUSIONES

Los estudios de laboratorio y en experiencia clínica revelan que el humo del tabaco es irritante para la mucosa respiratoria.

Las observaciones clínicas confirmadas por recientes estudios histopatológicos, indican que la inflamación crónica no específica de la boca, faringe y laringe es común en personas que han fumado excesivamente durante años.

Existe evidencia clínica de que la degeneración polipoide de las cuerdas vocales resulta de la irritación causada por el humo del tabaco.

Fumar trae como consecuencia la leucoplasia de la boca, la lengua, el paladar y la laringe.

La leucoplasia es un precursor común de cáncer. Una encuesta exhaustiva hecha recientemente concluye que el excesivo fumar es un factor importante como causa del cáncer laríngeo.

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President Eisenhower's effort to solve the current problems of the world without resorting to war. All time gained without war is of value to civilization, for once in a long while in the world's history, "in a moment, in the twinkling of an eye," an idea has broken forth that changed the whole course of all mankind. We have faith to believe that, once the Russian people realize what has been done to them, such a moment will occur again, this time on an epic scale.

For let it be clearly understood, above all things, that we are not in enmity with the Russian people except as they lend "their lives, their persons and their sacred honor" to the perpetuation of tyranny. We believe that they do this in ignorance, not knowing what real freedom can mean to a man. When they do know, they will find us their friends.

The fact remains that we cannot batter our way into their lives and tell them. The barriers remain effective, in spite of various sporadic and specious attempts to pretend they have fallen. Indoctrination has been so thoroughgoing that, on the rare occasions when a visitor from one of the free nations has had the opportunity to talk privately with a Russian, his representations of life in a free environment have been met with suspicion, half-hidden derision or frank and open disbelief. In these circumstances there is nothing we can do but wait, with what patience we can summon, for light to break through their darkness, and meanwhile make our voices heard for freedom. If we cannot stand for freedom without decrying its opposite, then we must decry it — openly, continuously and with all the force at our command, hoping that some echo of it will be heard where it will do the most good. The Hungarian tragedy, ghastly and costly as it has been and will be, may prove the turning point toward sanity and peace.

—M.T.

◆

... There is a part of the philosophy of medicine that has as yet been little attended to; I mean that which treats of the diseases of the mind, of the influence of affections primarily mental, on the corporeal functions, and particularly of the passions and emotions. Something, I am convinced, might be done on this subject. Every author whom I have read, in treating on it, has immediately exclaimed on its great difficulty, and most of them have asserted that it is impossible that we should ever acquire any knowledge on a business so intricate. But though we may never know *how* mind acts on matter, we may, by careful attention, possibly discover the general principles of this action; which is all, indeed, that we are able to attain in regard to the action of matter on matter.

—*Currie*

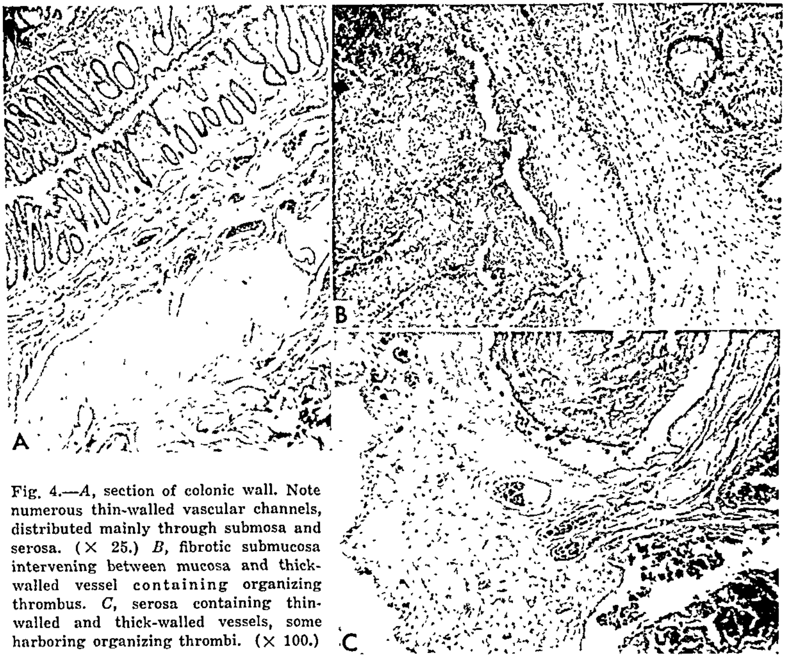

Fig. 4.—*A*, section of colonic wall. Note numerous thin-walled vascular channels, distributed mainly through submosa and serosa. (× 25.) *B*, fibrotic submucosa intervening between mucosa and thick-walled vessel containing organizing thrombus. *C*, serosa containing thin-walled and thick-walled vessels, some harboring organizing thrombi. (× 100.)

sented smooth serosal surfaces. Coursing throughout the mesenteric tissue were prominent vascular channels. These vessels were tortuous, and the lumens of some contained clots suggesting thrombi. Some of the vessels measured as much as 3 mm. in diameter, and most had relatively thin walls. Vascularity appeared to be contiguous with vessels entering the serosa of the large bowel wall. Exposure of the intestinal lumen demonstrated rather extensive focal modification of the mucosa. The mucosal rugae were broadened and irregular with an almost nodular appearance in some areas (Fig. 3). Individual mucosal processes varied from 2 to 4 mm. in width. Intervening patches of mucosa showed no remarkable alteration. No undue vascularity of the submucosa in uninvolved areas was recognized grossly. The involved mucosa had a distinctly bluish appearance. Sections through the mucosa suggested ectasia of vascular structures within the submucosa, as well as increased vascularity. The bowel wall was thickened from 5 to 8 mm. (including the serosa) in some areas where vascularity was most prominent. An estimated 60 to 75 per cent of the entire mucosal surface of the bowel showed this alteration in structure and pigmentation. Focal areas of hemorrhage measuring up to 2 cm. in diameter were scattered through the attached mesenteric tissue. This mesenteric tissue appeared edematous, and tortuous vessels, similar to those encountered within the bowel wall proper, were observed. The shorter two segments of bowel, measuring 5 and 6 cm. respectively, showed mild edematous and ecchymotic serosal fat and minor modifications of the mucosa similar to those observed in the longest segment.

Microscopic: Microscopic sections of the

Traité de Technique Chirurgicale: Appareil Urinaire et Appareil Genital de l'Homme. Tome VIII (Treatise on Surgical Technique: The Male Genitourinary Apparatus. Vol. 8). By Bernard Fey, Raymond Dossot and Louis Quénu. Paris: Masson et Cie, 1956. Pp. 870, with 899 illustrations.

The *Treatise on Surgical Techniques* consists of eight volumes, the eighth being devoted to operations on the genitourinary tract. The first edition appeared in 1940, and since then such great progress has been made in genitourinary surgery that the authors have rewritten Volume III and brought it up to date.

The first chapter is devoted to general considerations: anatomy, physiology, surgical technic, preoperative preparation, postoperative care, anesthesia and instrumentation.

In advance of any discussion of surgical technic, the anatomic aspects of the particular organ concerned are described in detail at the beginning of each chapter.

The various incisions for exposing the kidney are described. The authors point out that, although the lumbar incision was universally used in the past, other incisions have been devised that afford better exposure in certain instances, e.g., the anterolateral, the retroperitoneal-abdominal, the transperitoneal and the thoracoabdominal (Fey, 1925) approach.

The technics for radical and conservative operations on the kidney are described. A precise technic for nephrectomy via various routes is presented and discussed at length. There is an excellent chapter on nephrectomy for carcinoma, in which the kidney is ablated *en masse*, including the lymphatics. The relatively recent technic for removal of neoplastic implants in the renal vein and vena cava is described. Among the conservative operations, partial nephrectomy is particularly well handled.

The chapter on the many operations for the correction of obstruction of the ureteropelvic juncture is particularly well illustrated. Of great interest is the technic for intervention on the anomalous kidney.

Methods for removal of retroperitoneal tumor and the adrenal gland are presented, including the retroperitoneal, the transperitoneal and the transthoracic approach.

Current operations on the ureter are described, including the recent technic devised by Puigvert for removal of the lower portion of the sclerosed obstructing tuberculous ureter and reimplantation into the bladder.

In dealing with surgical treatment of the bladder, the authors include Darget's denervation technic. The technic for partial and total cystectomy is well illustrated. The most recent operation, creation of a substitute for the bladder, which consists of utilizing a segment of intestine to increase the size of the bladder or re-form it (Couvelaire and Cibert) is a promising procedure.

Prostatic surgical treatment is brought up to date, and suprapubic, retropubic and perineal prostatectomy, as well as transurethral resection, are described.

The surgical management of ruptures of the urethra is well covered. A chapter is devoted to surgical treatment of the female urethra, including various operations for the correction of incontinence.

Operations on the testicle include the radical procedure for carcinoma and anastomosis of the epididymis with the vas deferens.

The text is clearly written and the various operations precisely related in separate paragraphs, which makes the book surprisingly simple to read. The illustrations are all particularly good and enable one to follow each operation step by step. Seldom does one find so many illustrations in a volume on surgical technic. Anyone who wishes to increase his knowledge of genitourinary surgery can well afford the time to read this volume; the clarity of the text and the excellence of the illustrations will facilitate his task and add considerably to his efficiency.

CHARLES PIERRE MATHÉ, M.D.

sont passés en revue. L'auteur décrit un cas mixte d'hémangiomatose caverneuse et capillaire du colon et du rectum, présentant en outre des lésions similaires dans différents autres organes. L'opération a consisté en une hémicolectomie et une proctosigmoidectomie abdomino-périnéale, avec anastomose du colon transverse et de la partie inférieure du rectum, selon la technique de Swenson.

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Abstracts from Current Literature

The Prevention and Treatment of Ureteral Injuries Following Abdominal Surgery. Conger, K. B., Pennsylvania M. J. 59:563, 1956.

A surgeon who performs a large number of pelvic operations, particularly total hysterectomies, will probably one day find himself confronted with an injured ureter. These injuries are more common than is reported, as surgeons have no enthusiasm for publishing statistics on such complications. Because of the serious problem arising from this type of injury, it is important that every pelvic surgeon be familiar with the details of its prevention and treatment.

Ureteral injuries recognized during the operation should be repaired. There should never be any need to exteriorize a ureter. The splinting tubes used are pushed upward in the ureter to the renal pelvis and downward into the bladder, where the redundant portion is allowed to curl up. This is later recovered cystoscopically and exteriorized.

The surgeon who does a considerable number of pelvic operations can minimize the injury to the ureter by preoperative insertion of ureteral catheters. Knowledge of the principles of diagnosis and treatment of such injuries will result in the salvage of many kidneys that would otherwise be sacrificed.

EDMUND LISSACK, M.D.

Fifty-One Cases of Lung Cancer with Five Year Survival. R. H., and A. Gougas, J. A., J.A.M.A. 161:961, 1956.

The author reports 51 cases of five-year survival after treatment for carcinoma of the lung which represents experience with 845 patients seen between June 1932 and October 1950. Six hundred and seventy patients had histologically verified pulmonary carcinoma, and 234 were treated by surgical resection. Three out of 84 patients survived more than five years, although gross extension of the carcinoma in their cases was apparent. Fourteen of 55 with metastasis to the mediastinal lymph nodes lived five years or more. Thirty-four of 95 patients with neoplasms localized to the lung survived five years. The resection mortality rate was 15 per cent. Forty-three adenomas, benign and malignant, observed during the same period, were excluded from consideration. Age and sex seem to have little bearing on curability, although the five-year survivors were slightly younger and there were six times as many men as women among them. Fourteen per cent of the carcinomas were discovered on survey roentgen study. Cough, hemoptysis, thoracic pain and symptoms suggesting persistent or recurring infection of the respiratory tract were the common initial manifestations. Of the 7 patients with survey-discovered carcinoma, 4 delayed therapy until symptoms appeared. Seventeen of the 51 patients presented objective signs, including wheeze, diminished breath sounds or bronchial breathing and dullness to percussion. Bronchoscopic study in 18 of 46 cases showed a tumor and in 13 of these biopsy was performed. Sputum and bronchial cytologic study revealed carcinoma cells in 13 of 24 patients studied. All of the five-year survivors were treated by pulmonary resection. Not a single cure could be recorded among those treated by roentgen therapy or chemotherapy alone or in combination. Eight lesions were undifferentiated, and 1 was mixed epidermoid and simplex. Three undifferentiated carcinomas contained small foci of epidermoid and simplex patterns; 5 were large cell types. There were 6 adenocarcinomas; 2 well differentiated and 1 poorly differentiated with a simplex cell pattern, and 3 bronchiolar adenocarcinomas. Apparently none of the adenocarcinomas arose from adenomas. There were 36 epidermoid carcinomas, 10 of which were described as grade 3. The right lung was involved in 28 cases and the left in 23. The upper lobe was the site in 29 cases, the lower lobe in 15, and the middle lobe in 1. Six tumors encroached upon the mainstem bronchi. In 26 the carcinomas were peripheral to the main lobar bronchi; in 22

ção. A correção pode ser feita por descolamento das regiões gluteas e nova formação do sulco intergluteo. O A. discute um método de tratamento para a lesão inicial. Tal método assegura uma cicatrização rapida, permanência mínima no hospital e menor incidência de complicações.

SCHLUSSFOLGERUNGEN

Der "Rückfall" pilonidaler Erkrankung nach Resektion des befallenen Gebietes ist eine Komplikation der ursprünglichen Operation und nicht ein neues Auftreten der Krankheit. Die Einschränkung der Bewegung der durch übermässige Narbenbildung fixierten Gesässbacken und der Verlust eines Teiles der Gesässfalte kann zu einer Zerreissung der Narbe führen. Eine Infektion der Narbe ruft die Entstehung einer sezernierenden Fistel hervor, die der ursprünglichen Erkrankung ähnelt. Weitere Opferung von Gewebe verschlechtert die Aussichten auf Heilung. Der Schaden kann durch Befreiung der Gesässbacken und Wiederherstellung der interglutäalen Spalte beseitigt werden. Es wird ein bewährtes Verfahren zur Behandlung der ürsprünglichen Erkrankung erörtert. Diese Methode sichert eine rasche Heilung mit äusserst geringer Dauer des Krankenhausaufenthalts und mit verbesserten Aussichten auf das Ausbleiben von Komplikationen.

CONCLUSION

La "recidiva" de la enfermedad pilonidal después de la excisión del área que la contiene, es una complicación de la operación original y no una verdadera recidiva. La ruptura de la cicatriz es posible debido al movimiento limitado de las nalgas por el mismo exceso de cicatriz y por la pérdida de parte del tejido graso.

La infección de la cicatriz origina la formación de un seno de drenaje que semeja la lesión original. El sacrificio de más tejido empeora la posibilidad de curación. La correción puede lograrse liberando las nalgas reformando el surco interglúteo. Un método comprobado de tratamiento para la condición inicial se discute. Este metodo asegura curación rápida, hospitalización mínima y minimo de complicaciones.

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No physician, insofar as he is a physician, considers his own good in what he prescribes, but the good of his patient; for the true physician is also a ruler, having the human body as a subject, and is not a mere money-maker.

—*Plato*

eration and (4) foam cells. Sarcomatous changes have been reported in 37 to 41 per cent of neurofibromas. Malignancy is twice as common in tumors of the thoracic wall.

An uncommon tumor of the posterior portion of the mediastinum is enterocyst of the esophagus. This lesion is embryonically and histologically related to both gastroenteric and bronchogenic cysts. From the surgical point of view they often have a common wall with the esophagus, so that complete excision is almost impossible without damage to that structure.

The tumors of local predilection first considered are chondromas, which have their origin from the sternum, the costal cartilages, the costovertebral articulations and the articular surfaces of the intervertebral discs. Histologically benign chondromas often metastasize. They are classified as benign chondromas, benign osteochondromas, malignant chondromas and malignant osteochondromas. The prognosis of chondromatous tumors of the thorax must always be guarded.

Lipomas have been divided into three types: (1) dumbbells, in which the intrathoracic lipoma is continuous with an extrathoracic portion; (2) a type in which the tumor extends into the neck; (3) a type in which the tumor lies entirely within the thoracic cage. It is assumed that they are congenital.

Fibromas of the mediastinum are rare, but they (1) are more likely to undergo sarcomatous than are neurofibromas, (2) cause local symptoms and possibly become dangerous because of pressure effects, and (3) are slow growing, usually becoming manifest after the age of 40.

Other tumors have been reported as occurring in the mediastinum, including tumors of blood vascular origin, endotheliomas, hemangioendotheliomas, cystic hygromas, hamartomas, organized hematomas, myxomas, xanthomas, fibroleiomyomas, parathyroid adenomas, cysts of the azygos lobe, Boeck's sarcoid and echinococcus cysts.

HENRY J. ROSEVEAR, M.D.

The Surgical Treatment of Esophageal Stricture. Maclean, L. D., and Wangensteen, O. H., Surg., Gynec. & Obst. 1:5, 1956.

At the time this report was published 18 patients with esophageal stricture had been treated by a surgical procedure designed to decrease acid peptic irritation of the lower portion of the esophagus. Fifteen patients underwent subtotal gastrectomy, and in 3 the repair of a hiatal hernia, accompanied by a Heincke-Mikulicz pyloroplasty, was performed. In all 18 patients complete disappearance or substantial improvement in dysphagia occurred. The period of observation following operation ranged from four months to sixteen years. Gastric resection was carried out in 1 patient with an extensive corrosive stricture of the esophagus, with but slight improvement. An accompanying gastric or duodenal ulcer was observed in 6 patients with acid peptic strictures of the esophagus; hiatal hernia was present in 7 patients, and both duodenal ulcer and hiatal hernia in 1. In 4 patients no concomitant anatomic abnormality was detected. Reestablishment of a fairly normal esophagogram after gastric resection was observed in even the most deformed and strictured esophagi in the follow-up roentgenograms taken over a period of months. The size of the esophagus lumen, as estimated by the size of a dilator that traverses the strictured area, increased noticeably in the immediate and early postoperative period. Preliminary microscopic studies suggest that the depth of the esophageal lesion in cases of acid peptic esophageal stricture involves primarily the superficial layers of the esophageal wall (mucosa and submucosa) as contrasted with the stricture that results from the ingestion of caustic agents in which the entire esophageal wall becomes involved in the fibrotic process. The production of gastric acid frequently is elevated in patients with esophageal stricture. Esophageal resection with intrathoracic or cervical esophagogastrostomy is recommended for stricture due to lye or concentrated acid. Two patients who were incapacitated and not lastingly benefited by dilatation have been restored to full health after resection of the esophageal stricture. Reduction of the stomach's capacity to secrete acid peptic juice, accompanied by provision for ready emptying of the stomach, will minimize, if not eliminate completely, the likelihood of regurgitation of gastric juice into the esophagus.

WARREN A. YEMM, M.D.

may have been overlooked at operation. New granulations are visible to the naked eye in about one week, and epithelial proliferation is apparent soon afterward.

The great majority of patients in the series had not undergone previous definitive surgical treatment (Table 1). Twenty-nine per cent underwent the definitive operation in the presence of an acute abscess.

It was possible to determine the exact healing time required by 39 patients. The average healing time in those cases where operation was performed in the presence of an acute abscess was much longer than in those cases where no acute abscess was present (Table 2). Unroofing (excision of the outer walls of the cyst) was followed by a much longer healing period than was exteriorization alone.

Accordingly, I have now adopted the procedure of treating acute abscess by a very small incision; when evidence of acute inflammation has disappeared, the definitive operation is performed. Unroofing is no longer included in the operation. Twenty-six patients who did not have acute abscess were treated by exteriorization alone. The average healing time in these patients was fifty-one days. The mean healing time was forty days.

It was possible to do follow-ups on 39 patients who had undergone operation one or more years prior to compilation of the data (Table 3). The recurrence rate was 2.6 per cent.

The operative scars after exteriorization were narrow, soft and freely movable. No patient complained of a painful scar.

SUMMARY AND CONCLUSIONS

The rationale, historical background and technic of an exteriorization operation for pilonidal disease are briefly reviewed.

A small series of cases in which this condition was treated by a simple, conservative exteriorization procedure is presented.

In the author's opinion the exteriorization procedure has value, at least in cases in which no definitive operation has been performed.

The author makes no attempt to minimize the value of total excision. The exact indications for each type of operation should be determined through further investigation.

RÉSUMÉ ET CONCLUSIONS

L'auteur analyse brièvement les causes et expose la technique d'extirpation chirurgicale de l'affection pileuse. Il présente quelques cas personnels traités par simple extériorisation conservatrice. L'auteur accorde une certaine importance à cette technique, tout au moins dans les cas où il n'y a eu aucune opération antérieure, sans toutefois minimiser la valeur de l'excision totale. Les indications exactes pour chaque type d'opération devraient pouvoir être posées grâce à des recherches plus poussées dans ce domaine.

RESUMEN Y CONCLUSIONES

Se revisan brevemente el razonamiento, la historia y la técnica de una operación de extariorización para la enfermedad pilonidal.

Se presenta una pequeña serie de casos en los cuales ésta condición fué tratada por un procedimiento simple de exteriorización conservadora.

En la opinión del autor el procedimiento de exteriorización tiene valor, por lo menos en casos en los cuales una operación definitiva no ha sido efectuada previamente.

El autor no trata de reducir el valor de la excisión total. La indicación exacta para cada tipo de operación debe determinarse en futuras investigaciones.

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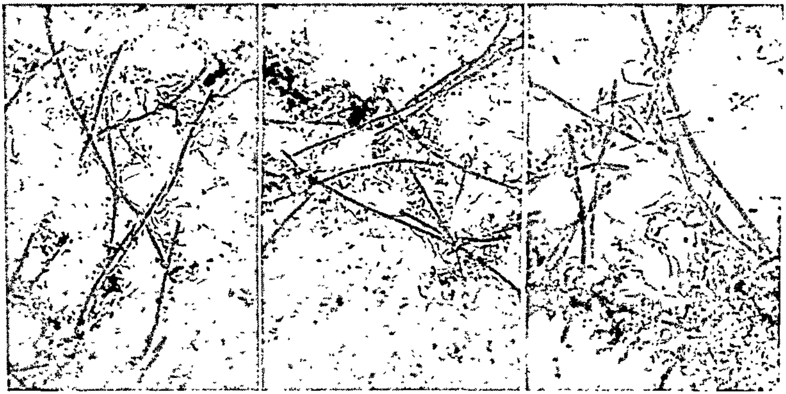

Colonies de Leptothrix prélevées sur les amygdales de Madame P, 48 ans atteinte de mycose pharyngée et génitale.

prolifération des points blancs fut telle qu'on en fit un prélèvement. Il montra des éléments mycéliens: Leptothrix. Un traitement local iodé fut installé, fidèlement suivi. Cela n'empêcha pas la propagation à la base de la langue qui devenait gênante. Je dus procéder au cours des vacances de Pâques à l'amygdalectomie, qui entraina la régression et la disparition de l'amygdalite linguale.

Une jeune femme de 24 ans, indemne d'un passé amygdalien, s'est reconnue atteinte de mycose, contrôlée aussi microscopiquement. Désirant éviter les séances de diathermo coagulation que je lui avais proposée, elle s'est soumise à des badigeonnages intensifs de "Mycodecil," fungicide à base d'acide undecynélique, qui eurent raison définitivement de l'amygdalite à Leptothrix.

Une malade de 48 ans, atteinte de rhume des foins, avait bénéficié de quelques séances de phenolisation nasale, quelques mois auparavant. Elle revint me consulter, ayant aperçu, depuis quelques jours, sur sa gorge des filaments longs ét épais, qui prenaient un développement très envahissant.

Je prélevais à la pince un fragment de muqueuse avec son clou. Le laboratoire me rendit compte de la présence de Leptothrix sur les coupes et les frottis. En joignant les microphotographies que nous reproduisons, le même laboratoire signalait que cette personne était atteinte de vaginite mycosique à Leptothrix; des éléments mycéliens identiques avaient été antérieurement découverts sur les frottis de sécrétion génitale.

Trois séances de diathermie suffirent à déterger les amygdales d'une véritable fôrêt de poils mycosiques.

L'étrangeté de cette affection, mystérieuse dans son étiologie, s'accroît de la bizarrerie de ses réactions à la thérapeutique.

S'il s'agissait d'un simple ensemencement mycélien, les applications iodées ou divers fungicides, suffiraient à le détruire. Or il n'en est rien la plupart du temps. Chez l'enfant, les collutoires les plus divers, y compris le "Mycodécil," ont été

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Sur un Cas de Foster-Kennedy Syndrome par Compression du Troisieme Ventricule

G. JULES VERNE, M.D.

PAPEETE, TAHITI

LE territoire tahitien n'est pas grand: la population entière des Etablissements Francais de l'Océanie ne doit guere exceder soixante mille âmes. Et, cependant, à côté d'un bilan sanitaire satisfaisant en général on y rencontre une diversité pathologique assez remarquable.

Voici, a ce propos, l'histoire d'un habitant de Taravao, dont l'aventure vient de trouver, a Honolulu, son épilogue, un épilogue honorable, sans doutemais que des moyens d'investigation plus précis nous auraient permis d'écrire plus tôt et de plus heureuse manière.

Le début progressif, de l'histoire clinique de Tuaiva T........., cultivateur, âgé de 41 ans, parait remonter a deux ans environ, par des céphalées transitoires, a localisation essentielle fronto-orbitaire gauche, sourdes, exacerbées au début de la nuit, et nettement accentuées par l'effort et les mouvements de la tête.

En meme temps, apparait avec la perte de l'appétit, un amaigrissement progressif.

Les choses demeurent en l'état pendant six mois environ, puis, de transitoires, les céphalées deviennent permanentes, accompagnées de sensations de battements, cependant que l'acuité visuelle demeure intacte.

En janvier 55, l'evolution parait se précipiter: l'acuité visuelle décline rapidement a G, tandis que les céphalées, de plus en plus intenses, ne laissent au malade aucun répit. L'apparition, en février de sensation de déséquilibre, décide le malade à se présenter à la Consultation de l'Hôpital de Taravao (Dr. Castorene), oû un syndrome d'hypertension intracranienne, cliniquement suspecté est biologiquement confirmé par une dissociation albuminocytologique du L. C. R.

Une stase papillaire bilaterale, reconnue a la Consultation Ophtalmologique de l'Hopital de Papeete, decide de l'hospitalisation du malade dans cette formation, le 15 mars 1955.

Une enquête rapide dans les antécédents du malade ne revèle, en dehors d'une fracture de la jambe droite dans l'enfance et de la clavicule gauche a l'âge de 37 ans, que la notion d'Asthme dont le malade souffre depuis l'âge de 10 ans.

Aucun élément notable dans le passé pathologique de ses parents ni de ses collatéraux: aucune notion d'acromégalie, en particulier.

A l'entrée, le malade est apyrétique, se plaignant seulement de céphalées incessantes qui seront d'ailleurs rapidement calmées par le sulfate de Magnésie.

L'examen du malade révèle que son acuité visuelle est égale à 0,7 à dr mais seulement a 0,4 à gauche.

La tonométrie montre une tension oculaire égale a 25 des deux cotés!

Les réflexes pupillaires sont paresseux, tandis que la transparence des milieux réfringents est normale.

L'examen du F.O montre:

1) *a droite:* Le disque apparait soulevé par l'oedème qui déborde largement les frontières et ondule en plis la rétine péri-

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Submitted for publication Sept. 19, 1956.

come across the border quite alone, terrified, often sick, sometimes wounded (generally the latter because of getting caught in crossfire of street fighting), and sometimes they have pinned to their clothing little scribbled notes reading something like this—'This is Maria Javot. She is six years old. Please somebody take care of her and raise her to be a good woman. Jakob Javot.' Or 'This boy's name is Ivan Katai and he is five years old. He is a Roman Catholic. Please keep a record of where he will go so I can find him some day. I must stay and fight. Teach him to be a fine man and teach him to fight so he can come back and fight for Hungary when he is older. Sandor Katai.' Or 'This child is Josefin Janovic and she is a Lutheran. Please make her understand that we love her but had to stay in Hungary and want her to be free. Give her a home and teach her to be a fine woman. We will try to find her if we can get out later. Maria and Josef Janovic.'

"The Escapee Office is working almost around the clock, and the Consulate is also. We stop when we simply have to for food and rest, but I always feel guilty even then. Yesterday I had my office filled with Hungarians who were to fly out shortly for America, Canada and Australia. They came from the voluntary agencies (who operate the camps) with clothing forms, which we must sign before they can go to the contractual store for their clothing. We used to give a suit, overcoat, work clothes, shoes, four shirts, four sets of underwear, four pairs of socks, gloves, etc., etc., to every escapee, but now we are fearful of running out of funds and must cut down to one of each item, and if they get a coat they cannot get a suit. Anything to get them covered warmly and to stretch the rations as far as possible. Women and children of course get similar rations. Yesterday I had a charming little Hungarian girl here with her clothing request. We signed it and off she went, practically in tears. Today she returned in her new clothes, and somewhere along the way she had managed a lipstick, for she was all dolled up, looked very pretty and not at all the dejected person we had the day before. But, she said, she would like us to give her a paper saying she could get stockings. I told her stockings were on the form she had yesterday, and then the very feminine little story came out. She had been given the usual coat the store hands out (there is of course a price limit on each article we can issue) but saw another she liked better, talked the salesman into letting her have the prettier one; however, he could not go over the total amount allowed for the list, so she wound up with no stockings, this bit of money going to pay for the nicer coat. We could do nothing about it, but I thought the story was sweet. I'd have given her a couple of pairs of my nylons upstairs but she would have spread it around the camp and we'd have a few hundred girls here the next day hoping to get nylons, so I had to button up my heart and do nothing. The various countries offering refuge to these Hungarians have been wonderful about it, but I hope they'll open up their doors even wider. The number grows daily, and Austria simply cannot support them, nor can we if they stay too long. There is a limit to our strength and our funds, and in this weather we must find housing for them somehow, tents would only mean death in the snow and rain and cold of Austria. If it were only summer—but it isn't, so we must somehow, some way shelter these ill-clad people.

"At the moment we're trying desperately in my office to get all of the registration cards filed in order so that we can find people, can OK their clothing requests, perhaps get a few people back with their families. I don't know how long we can go on at this pace, and extra help seems impossible to get since so many voluntary agencies are using it, and the Consulate itself has taken so many hands on. I can get an extra termediaire d'autres formations endocraniennes.

SUMMARY

A meningioma of the dura mater and falx cerebri compressing the third ventricle and causing internal hydrocephalus by blocking the aqueduct of Sylvius, constitutes the object of this report.

In this particular case the floor of the distended ventricle, encroaching upon the optic chiasm, also exercised a pressure on the left optic nerve and induced a Foster-Kennedy syndrome.

Operation, performed by Dr. Cloward in Honolulu, produced immediate alleviation of the subjective symptoms and recovery of useful visual acuity.

The various causes of the syndrome are reviewed and the diagnostic data specified, with particular emphasis on the polymorphism of perimetric defects in such cases. It is stressed that the conspicuous value of localization of the Foster-Kennedy syndrome is to give evidence of pressure at the level of the anterior fossa, this pressure originating either from a space-taking lesion at the level or, as in the present case, from a remote tumor through the channel of some intracranial component part.

◆

> I have recently read, with mingled sadness and surprise, the declarations of some surgeons that anesthetics are needless luxuries, and that unendurable agony is the best of tonics. Those surgeons, I think, can scarcely have been patients of their brother surgeons, and jest at scars only because they never felt a wound; but if they remain enemies of anaesthetics after what you have written, I despair of convincing them of their utility . . .
>
> As for the fear entertained by some, that the moral good which accrues from suffering, and is intended by the Ruler of all to be secured by it, will be lost if agony is evaded by sufferers having recourse to anaesthetics, we may surely leave that to the disposal of Him who does all things well. The best answer to such complaints I have heard, was given by an excellent old lady to another, who was doubting whether any of the daughters of Eve were at liberty to lessen by anaesthetics the pangs of child-bearing: "You need not be afraid," said the wiser lady, "that there will not be enough suffering in the world."
>
> —*Simpson*

From the Executive Director's Notebook

Dr. Ross T. McIntire
F.A.C.S., F.I.C.S.

Now that the year 1956 has come to its close, it might be well to look back over the months and review some of the accomplishments of the College.

Much work has been done by the Qualifications Council. As a result an excellent pamphlet has been issued, clearly setting forth the standards required of Qualified Fellows and Associate and Junior Members. This has made it possible for our Regents, Vice-Regents and the members of the Credentials Committee to discuss intelligently with prospective members the high standards that have been set, and the reasons why they were set.

The Woman's Auxiliary of the United States and Canadian Sections made a gift to the College of $12,000 for scholarships and $6,000 for research purposes. This gift enabled the committee on surgical scholarships and research to select outstanding candidates from foreign countries to come to the United States to study. This is the beginning of an ambitious program for the establishment of surgical scholarships in teaching institutions throughout our country. At the same time, programs are being established to send young surgeons from the United States to Europe for postgraduate study.

An outstanding achievement of the past year was the establishment of the School of the History of Surgery and Related Sciences. The first lecture was given by Dr. Leo M. Zimmerman of the University of Chicago on Oct. 23, 1956. These lectures are being given in the International Surgeons' Hall of Fame, and will contribute much to our knowledge and to an understanding of the background of surgical practice.

A surgical symposium, established by the International College of Surgeons in conjunction with the University of Santo Domingo, has just concluded its course of studies. This has been referred to from time to time in this Bulletin, and a complete report will be forthcoming soon.

The University of Santo Domingo, which is the oldest teaching institution in the Western Hemisphere, was founded in 1538. It has a four-year medical school. The University invited the International College of Surgeons to work out a program whereby outstanding teachers in surgery would travel to the Dominican Republic and spend at least one week in teaching as well as demonstrating surgical technics that are practiced in the United States.

This sort of program bears out one of the prime reasons for the existence of the International College of Surgeons: the exchange of surgical and professional knowledge. Perhaps its even greater importance is in its contribution to the improvement of friendly relations between our country and that of Santo Domingo. There is no better way to assist our own government than by carrying out a program at a professional level that will not only inspire confidence between our peoples, but add to the health and well being of the people of another land.

We are very hopeful that the success of the Santo Domingo program, which is now assured, may serve as a pattern whereby the International College of Surgeons can in like manner lend assistance to other countries. One should never forget, moreover, that we ourselves gain by such programs. There are many lessons to be learned from the surgeons of other lands. Advanced as we are in surgical technic, we do not have a corner on this most important field. This we have seen in many lands. We

ble la extracción y necesario el practicar incisiones para extraer el vaso en dos o tres tiempos. El corte de la copa va disecando el tejido perivenoso y seccionando las colaterales; la vena se introduce dentro de la copa, a excepción de su cuarta parte superior, de tal suerte que sale limpia, (pelada), y se tiene la impresión de que ha dejado un tunel pequeño, se ha hecho un traumatismo minimun, y la hemorragia es despreciable. Nunca he tenido complicaciones que lamentar, y los pacientes dejan el Hospital a los seis u ocho dias.

SUMMARY

The author presents descriptions and drawings of a new phlebodissector he has found useful in excision of the internal saphenous vein. His operative technic is described in detail, with instructions as to the proper use of the phlebodissector.

IMPORTANT NOTICE TO ALL CONGRESS PARTICIPANTS

Those desiring their Congress presentations to appear later as articles in the Journal of the International College of Surgeons, please note:

1. **A full copy of the manuscript, together with all illustrations, legends, tabular matter and bibliographic references,** should be sent DIRECT to the Editorial Office, Journal of the International College of Surgeons, 1516 Lake Shore Drive, Chicago 10, Illinois. Manuscripts so submitted will be promptly acknowledged and, on acceptance by the Editorial Board, published as soon after the Congress as possible. **The Journal cannot be held responsible for loss, failure of acknowledgment, delay in publication or nonpublication of any manuscript, or any subsidiary material appertaining thereto, which has not been submitted through the official editorial channels.**

2. Manuscripts may be submitted in advance of the Congress if desired. When this is done, they should be **plainly marked with the name, place and date of the Congress concerned,** to guard against premature publication.

3. Manuscripts delivered in person to Congress officials or others **for press reportorial use only** should be sent by the recipient to the Public Relations Bureau.

These requests are made not only to safeguard the Journal from error but in the best interests of our contributors. To make sure of prompt acknowledgment and efficient handling of your Congress presentation, please send it *DIRECT* to its ultimate destination!

UNITED STATES SECTION

International College of Surgeons

THE PRESIDENT'S MESSAGE

It can be predicted from cycles of previous history that civilizations, when they reach their peak, inevitably terminate periods of culture, just, for example, as Roman civilization replaced Greek culture; in the present century there have been many evidences in medicine of change from a cultural phase to one of civilization.[1] Old ideas are being sacrificed for practical gains.

No one will challenge the gains which have accrued from tremendous advances in the science of medicine—arising from the use of exact, organized and classified knowledge. But, as physicians, we hope that those who follow us will not be stripped of those virtues connected with the art and wisdom of our profession. What is surgery? It is a vocation marked, first, by the extent of the preparation of its members and, also, and more so, by the fact that its members must render personal service.[2] Therefore, the services which a surgeon offers are essentially personal and his work should be as much an art as a science—although with a background of rigorous mental training. Especially should the surgeon strive for understanding wisdom, which Webster defines as "the capacity of judging soundly and dealing broadly with facts, especially in their practical relations to life and conduct." We must encourage in our teaching not only intellectual proficiency and academic performance but the more intangible spiritual qualities which set apart the truly great physician.[3]

The physician should be an emotionally mature person, responsible for his decisions and accepting their consequences, able to work with people in the presence of disagreement, accepting constructive criticism gratefully, without excessive regret over the past nor excessive anxiety about the future.[4] Such a man will oppose error, intolerance, ignorance and vice but can pity those who err, be tolerant even of intolerance, teach the ignorant and labor to reclaim the vicious. Such a surgeon will identify himself with his patient, give sympathy without effort, kindness without desire for reward and tolerance without censure.

Dr. Curtice Rosser

The surgeon will still delight in handicraft, preserve the fascination of artisanship and experience the appeal of positive action.[5] He will still enjoy the resolution of the obscure and the direct attack upon disease—but will also show those he serves, by example as well as by spoken word, how to find dignity and courage in the presence of pain, sorrow and even frustration.

As an internationalist, I rejoice in membership of the world's greatest fraternity. As Walter Cannon said,

> "Wherever a doctor may go in civilized society, he is welcomed by his fellow doctors. As disease itself is no respecter of national or racial differences, so the doctors, in their humane service, do not respect them.
>
> "Though methods of treating injury and disease may differ in different lands, the aim is everywhere the same: The mitigation of human suffering, the saving of human life.
>
> "In that humane purpose is firmly based the vast brotherhood of Doctors of Medicine."

May I quote and affirm as my own, words spoken a half century ago by a father whose memory lingers warmly in my heart:

"The glory of the profession is not so much in its men of brilliant mark, as in

New Books

Books Received.—The following books have been received by the Editor; they will be reviewed critically as space and facilities permit. Omission of more extended review, however, is not to be taken as criticism of the merit of the book.

Ankylosing Spondylitis: Clinical Considerations, Roentgenology, Pathologic Anatomy and Treatment. By J. Forestier, F. Jacqueline and J. Rotes-Querol. Translated by A. U. Desjardins. Springfield, Ill.: Charles C Thomas, Publisher, 1956. Pp. 374, with 145 illustrations.

Tumors of the Skin. By Herbert Conway. Springfield. Ill. Charles C Thomas, Publisher. 1956. Pp. 267, with 178 illustrations, 3 in color.

Handbook of Physical Therapy. By Robert Shestack. New York: Springer Publishing Company, Inc., 1956. Pp. 212.

Atlas of Tumors of the Nervous System. By H. M. Zimmerman, Martin G. Netsky and Leo M. Davidoff. Philadelphia: Lea & Febiger, 1956. Pp. 191, with 277 illustrations (233 in color).

Etiologic Factors in Renal Lithiasis. By Arthur J. Butt. Springfield, Ill.: Charles C Thomas, Publisher, 1956. Pp. 401, with 153 illustrations.

New Illustrated Practice of Surgery: Fascicule IX. Edited by Jean Quenu. Paris: G. Doin et Cie. 1956. Pp. 264. with 227 illustrations. *Reviewed in this issue.*

How to Enjoy Good Health. Edited by Cyril Solomon and Brooks Roberts. New York: Random House, 1956. Pp. 240.

Diagnostic Procedures for Virus and Rickettsial Diseases. American Public Health Association. New York: Publication Office, American Public Health Association, 1956. 2d ed., Pp. 578.

Head Injuries and Their Management. By Francis Asbury Echlin. Philadelphia: The J. B. Lippincott Company, 1956. Pp. 127, with 10 illustrations.

Pye's Surgical Handicraft. Edited by Hamilton Bailey. Bristol: John Wright & Sons, Ltd., 1956. 17th ed. Pp. 800, with 860 illustrations.

The Merck Manual of Diagnosis and Therapy. Rahway, N. J.: Merck & Co., Inc., Publications Department, 1956. 9th ed. Pp. 1,888. *Reviewed in this issue.*

Surgery in General Practice. By Victor Richards. St. Louis: The C. V. Mosby Company, 1956. Pp. 947, with 476 illustrations. *Reviewed in this issue.*

Fluid Balance Handbook for Practitioners. By William D. Shively Jr. and Michael J. Sweeney. Springfield, Ill.: Charles C Thomas, Publisher, 1956. Pp. 326. *Reviewed in this issue.*

The Biliary Tract. By Julian A. Sterling. Baltimore: Williams and Wilkins, 1956. Pp. 424, with 94 illustrations. *Reviewed in this issue.*

Bronchus und Tuberkulose: Bronchoskopische und Bronchographishe Untersuchungen der Bronchien bei der Tuberkulose (Fortschr. a. d. Geb. d. Röntgenstrahlen, Ergänzungsband 73). By A. Huzly and F. Böhm. Stuttgart: Georg Thieme Verlag, 1955. Distributed in the United States and Canada by the Intercontinental Medical Book Corporation, New York 16, New York. Pp. 138, with 258 illustrations. *Reviewed in this issue.*

Pen Portraits of Distinguished Fellows

of the

International College of Surgeons

PROF. DR. RAYMOND DARGET, F.I.C.S. (Hon.)

Life began for Raymond Darget, the eminent French urologic surgeon, in quiet Orthez, a small town in the foothills of the Pyrenees. That he should choose surgery as his career was natural, for he comes of a family whose members have dedicated their lives to medical science. Having completed his preliminary education he enrolled at the University of Bordeaux, where he pursued his surgical studies. He was, moreover, an outstanding student, winning several distinctions as a result of his scholastic standing. One of the first of these was his winning of the Gold Medal which the hospitals of Bordeaux gave annually to the top-ranking intern. His unfaltering steps forward in his professional studies brought for him the post of Aide in Anatomy to the Faculty of Medicine. His theoretical knowledge and his dexterity earned for him the subsequent title of Prosector of the Faculty.

When the incident at Sarajevo touched off the conflagration that embroiled twenty-seven nations in the First World War, Dr. Darget exchanged his civilian garb for a uniform of the French Army. He served medically the men in a battalion of infantry soldiers from 1914 to 1916. He was then placed in charge of a surgical unit, working with an ambulance corps whose responsibility it was to care for patients who were not transportable. He kept this assignment from 1916 to 1919.

His first civilian appointment after the war was as the Chief of the Gynecologic Clinic of Bordeaux, a post he held for two years. He was then appointed surgeon to the Hospitals of Bordeaux, which had so early in his career recognized his promising qualities and awarded to him the coveted Intern's Gold Medal.

Prof. Dr. Raymond Darget

In 1924 he was named Professeur agrégé of Urology, and twelve years later he earned the title of Professeur agrégé of General Surgery.

When the Second World War broke out in 1939, Prof. Darget once again prepared to relieve the suffering of the youth of France, volunteered for active duty.

In 1943 he was appointed Chief of the Chair of Urology of the Hôpital du Tondu, where he is the head of an eighty-bed service.

If one were to depend on Prof. Darget to tell the story of his achievements, there would be no story, for to himself he is the least important of persons. The only people whose achievements he can speak of without reticence are his "beloved secretary," Mrs. Darget; his colleagues, and his devoted patients.

Center of Baylor University. These impulses have made him, no medical man, a force in American medicine, and medical readers may find it worth their time to trace his development as here set forth, albeit in journalistic style, by two veteran newsmen.

Roy Cullen's was a hard road of experience as cotton broker, real estate man, and "wildcatter" oil producer. It led to triumph as he succeeded in bringing in wells in areas abandoned after repeated failures by experts of the big companies—a success that hinged on his intimate knowledge of terrain, including the configuration of water-courses (which he dubbed "creekology"). His technical achievement was recognized when the Ph.D. was *awarded him for a method of drilling through* the stratum of "heaving shale." Not without importance, too, are the many pages devoted to his political activities as a Texas Republican, whereby he again exerted a national influence.

Alike in politics, business, and benefactions, Mr. Cullen has championed the conser*vation of traditional liberties and indepen*dence in enterprise. His life thus presents the classic picture of that philosophy as applied to the system of medical enterprise in America. As such it offers a thought-provoking object lesson to other leaders; for that system will endure only if they sense and face up to their responsibilities, crea*tively, with humanity and love for all colors* and creeds.

Admittedly, this is an "appreciative" biography, in the saga tradition. Yet, the human character does come through, in homely turns of speech, and again in moments of high drama. The reader will not soon forget the picture of Roy Cullen weeping as he receives the thanks of crippled patients he has helped, and his words: "My cup runneth over."

M. T.

Bronchus und Tuberkulose: Bronchoskopische und Bronchographishe Untersuchungen der Bronchien bei der Tuberkulose (Fortschr. a. d. Geb. d. Röntgenstrahlen, Ergänzungsband 73). By A. Huzly and F. Böhm. Struttgart: Georg Thieme Verlag, 1955. Distributed in the United States and Canada by *the Intercontinental Medical Book Corpora*tion, New York 16, New York. Pp. 138, with 258 illustrations.

The authors emphasize in this preface the fact that they chose the title "Bronchus and *Tuberculosis" and not "Tuberculosis of the* Bronchus" to indicate that not all alterations of the bronchial tract in the tuberculous patient are a result of bronchial tuberculosis.

The first four chapters deal with pathologic *changes involving the bronchus occurring in* pulmonary tuberculosis, in tuberculosis of the endothoracic lymph nodes, in tuberculous pleuritis, and as a result of active management of pulmonary tuberculosis by pneumothorax, phrenicus exeresis and segmental resection.

The fifth and sixth chapters are devoted to a comprehensive study and disussion of tuberculosis of the bronchus. The final (seventh) chapter describes the sequelae of healing or healed tuberculosis affecting the bronchus, such as stenosis, bronchiectasis and deformities.

The study is based on 3,213 bronchoscopic and 2,373 bronchographic examinations of tuberculous patients, and the authors claim that tuberculous alterations of the bronchus are observed in 10 to 13 per cent of the cases. The subject is discussed mainly by the presentation of thoroughly studied hospital cases, which are illustrated by routine roentgenograms of the *chest, tomograms, bronchograms, anr diagrams* or colored drawings of the bronchoscopic observations.

The book represents much more than a report on an elaborate scientific study. The observations reported are of great practical significance in the prognosis of tuberculous lesions of the bronchus and for the evaluation *of therapeutic procedures in pulmonary tu*berculosis. It is encouraging to realize that modern chemotherapy is able to cure bronchial tuberculosis in a great number of cases which, until not so long ago, belonged in the "hopeless" category. The observations of the authors further indicate that, among the methods of collapse therapy, thoracoplasty is often responsible for deformities and stenoses of the bronchus with subsequent devastating bronchiectases, while such complica-

TENTH INTERNATIONAL CONGRESS
MEXICO, D. F., FEB. 24-28, 1957

Prof. Dr. Manuel A. Manzanilla, F.I.C.S. (Hon.), Professor of Clinical Surgery of the Faculty of Medicine of Mexico, D.F., a Vice-President and Liaison Secretary of the International College of Surgeons and member of the Board of Governors of the College, is the Chairman of the Arrangements Committee for the Tenth International Congress that will convene at University City in Mexico, D. F., on Feb. 24-28, 1957. He has done a magnificent organizational job in planning for the scientific sessions, exhibits and social events in connection with this Congress. Invitations to attend the meetings have been extended to surgeons throughout the republics of South America, Central America and Europe as well as to members of the profession in Mexico, the United States, Canada and the numerous national sections of the International College throughout the world. The response to the invitations had been most gratifying, and there is every indication that this will be one of the largest scientific gatherings that the International College has yet attracted to any meeting in the Western Hemisphere.

In the arrangements Prof. Manzanilla has enjoyed the whole-hearted cooperation of the Government of Mexico, which views the Congress as an important national event. **His Excellency Don Adolfo Ruiz Cortines,** President of the Federal Government of Mexico, was largely responsible for extending the invitation to the International College to convene in the capital of his country in 1957. With the official support of the Mexican Government, the surgeons who attend will enjoy the full hospitality that such support entails.

The Grand Opening Ceremony of the Tenth International Congress will take place at the Palace of Fine Arts. All of the scientific sessions will convene at University City, one of the most beautiful campuses in the world.

Prof. Manzanilla has been aided in the arrangements by **Prof. Dr. Raul Arturo Chavira,** F.A.C.S., F.I.C.S. (Hon.), Professor of Clinical Ophthalmology of the Faculty of Medicine, Mexico, D.F., President of the Mexican Section of the International College and a member of the Board of Trustees of the Section; **Prof. Dr. Francisco Fonseca,** F.I.C.S. (Hon.), Professor of Clinical Surgery of the Faculty of Medicine, Mexico, D.F., and a member of the International Board of Governors of the International College; **Prof. Dr. Juan Mora,** F.I.C.S., former Professor of Clinical Surgery of the Faculty of Medicine of Mexico, D.F., Treasurer of the Mexican Section and a member of the International Board of Governors of the College, and **Dr. Manuel Manzanilla Jr.,** F.I.C.S.

Prof. Dr. Manuel A. Manzanilla

pochlorhydria. He cites the work of Bruce as having demonstrated conclusively that the capacity for acid secretion, even to an abnormally high level, can be fully recovered by the remaining segment of stomach. If confirmed, this would constitute a most serious indictment of partial gastrectomy.

At present the problem of preventing postgastrectomy complications is largely unsolved.

Concerning gastrojejunostomy and vagotomy, Farquharson expresses the opinion that this method of treatment is still in the experimental stage. In his experience this combination has proved quite satisfactory as regards the immediate or early results, but he is convinced that many of the successes may have resulted from the gastrojejunostomy alone and that the vagal resection carries some disadvantages, including complications that may develop in later years from the denervation of such a large part of the alimentary tract.

The third portion of this provocative and timely article deals with gastrojejunostomy alone and what can be expected from this operation for the duodenal ulcer patient today, in contrast with the same operation employed for the same disease during the first two decades of this century. Since about 1925, gastrojejunostomy has fallen into disrepute because of its alleged liability to subsequent stomal ulceration.

The incidence of stomal ulceration following gastrojejunostomy has been reported at widely divergent figures from various sources. Farquharson is of the opinion that the incidence is probably much closer to the 3.5 per cent noted in a large series of collected reports than to the figures ranging as high as 50 per cent reported from other, much smaller, statistical material.

Even if the higher incidence of stomal ulcer were factual, the complication today is no longer the serious matter that it was twenty years ago. Tanner (1954) encountered only 1 death in 107 cases, which represents a mortality rate actually lower than that which he records for partial gastrectomy in uncomplicated cases of gastric and duodenal ulcer. In short, stomal ulcer after a simple gastrojejunostomy seems at present to be readily amenable to treatment by partial gastrectomy. The development of further stomal ulceration is comparatively rare, possibly because the jejunum has developed some degree of immunity to the gastric juice.

By contrast, the patient in whom a stomal ulcer develops after partial gastrectomy is in a very different position. Although this complication may be much less common than it is after gastrojejunostomy, it is incomparably more serious, for there is little to offer the patient except the doubtful benefits of a still higher gastrectomy or a vagal resection.

In summary, this article gives voice to the author's serious doubts and misgivings that such an irrevocable and seemingly mutilating operation as partial gastrectomy should be accepted as the standard treatment for duodenal ulcer today. Farquharson is not at this point advocating unreservedly a return to simple gastrojejunostomy as the surgical treatment of choice for duodenal ulcer. He does, however, question whether it might not be more reasonable to accept a high risk of stomal ulceration in return for the privilege of retaining the stomach.

This reviewer recommends strongly that the original article be read by every gastric surgeon.

THOMAS WILENSKY, M.D.

Some Observations on the Incidence of Thyroid Cancer in the United States. Mustacchi, P., and Cutler S. J., New England J. Med. 225:889, 1956.

The authors attempt to correlate the incidence of carcinoma of the thyroid according to age, sex and geographic region. The study includes ten metropolitan areas with a population of 14,000,000 inhabitants. It was observed that carcinoma of the thyroid occurs more frequently than is generally supposed. The incidence is higher in women than in men and equal in the white race and nonwhite races. The incidence of nonpapillary carcinoma increases with age, whereas papillary carcinoma is not affected by age. This study revealed a higher incidence in the west than in other areas.

ERNEST G. DEBAKEY, M.D.

THE BEGINNINGS OF SURGERY AND *THE EDWIN SMITH PAPYRUS*

Leo M. Zimmerman,[*] M.D., F.A.C.S., F.I.C.S.

Surgery, the art of healing by manual or operative means, is usually thought of as a late blossoming on the tree of medical knowledge. In truth, however, surgery is old, probably the oldest of all forms of medical treatment. The earliest human beings sustained wounds in hunting and warfare. There were foreign bodies to remove, broken bones to heal. We are told that even animals learn to extract foreign bodies, to stop the flow of blood by applying pressure and, what is more, to amputate their own hopelessly mangled limbs. From these early instinctive beginnings over the millenia, surgeons have continued to wrestle with injuries and diseases, the causes of which were evident and the management of which was rational. The practitioners of this craft were traditionally neither scholars nor aristocrats. Plodding the long, slow road over the ages, they observed and learned, and passed on to their followers the simple, practical truths which they had gleaned. They needed precise anatomic knowledge to reduce fractures and dislocations, and to make incisions without injury to vital and important structures. Sir Clifford Albutt, a historian and physician, spoke with reason of surgery as "the scientific arm of medicine."

Dr. Leo M. Zimmerman

The evolution of medicine over the centuries has followed a widely divergent pattern. The physician, in contrast to the surgeon, was called upon to cure diseases, the origins of which were mysterious and unknown. In every primitive culture, illness and death have been frightening and awe-inspiring. In the primitive mind, they always have been associated with the supernatural. Sickness, striking with an invisible hand, and pain, accompanied by no visible wound or foreign body, were attributed to evil spirits, to black magic, to the wrath of the gods or to the dominance of malignant over benign deities. Such ailments obviously could be overcome only by exorcising the evil spirit, propitiating the irate divinities or counteracting the bad magic by a stronger and more beneficent white magic. These functions certainly belonged to the priests and, usually, the medicine man and the priest were the same person. They were either tribal chieftains or members of the most powerful families. They were respected and revered as the elect among men.

In later cultures, when philosophy took the place of religion and mysticism, illness was explained on the basis of a succession of fanciful theories which had little factual foundations. The practitioners of medicine were philosophers, scholars or the socially elect. They were the educated and they were aristocrats. They looked with disdain on the surgeon who was a lowly craftsman and worked with his hands. For anatomy of the status of the pancreas, is *additionally* important. With any of these congenital abnormalities, surgical dissection must be advanced with extreme caution, since any type of arterial abnormality may be encountered.

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[*] Chairman, Department of Surgery, Chicago Medical School. Paper read at the School of the History of Surgery and Related Sciences of the International College of Surgeons, Chicago, Oct. 23, 1956.

Abnormal positions of the gallbladder, including 1 case in which the organ was in the abdominal wall and 1 in which it occupied the falciform ligament, are on record. Two cases of left-sided gallbladder, reported by Etter in 1953 are also included.

A transverse position of the gallbladder, in which the viscus was almost entirely surrounded by hepatic substance, was encountered twice by Gross in 1936, but no cases have been reported since that time.

One case of retroperitoneal retroduodenal gallbladder is included.

The intrahepatic gallbladder is either partially or totally embedded. Liver needling has been recommended in cases of apparent absence of the gallbladder. Removal of a totally embedded gallbladder presents extremely difficult problems of hemostasis, and the method of procedure must depend upon the extent to which the organ is included within the liver substance.

Torison of the gallbladder occurs only when the organ is entirely surrounded by peritoneum and either lies free in the abdominal cavity or is suspended from the undersurface of the liver by a length of mesentery. Torsion of the gallbladder has been reported as occurring in a 5-year-old child and in a patient 93 years old. *In the present series of 24 cases since 1936,* only 1 death was reported—that of a 79-year-old white man. The possibility of torsion and axial rotation in elderly persons should be kept in mind, as delaying operation is likely to result in death.

Gastrointestinal mucosa and pancreatic tissue have both been observed within the gallbladder wall. Aberrant pancreatic tissue has also been reported as existing in the wall of the cystic duct.

THOMAS WILENSKY, M.D.

Outcome of Surgery for Ulcerative Colitis. Brooke, B. N., Lancet 2:543, 1956.

The question has arisen as to what is the *expectation of life of patients who have undergone* total colectomy for ulcerative colitis. The author answers this question by reviewing the cases of 131 patients with ulcerative colitis who come under his care. For 5 patients, only emergency or diagnostic laparotomy was undertaken; 126 underwent elective operations (117, excision and permanent ileostomy; 9, resection and anastomosis) with 15 operative and late deaths, a mortality rate of 12 per cent.

The disease was twice as common in the female as in the male and was most common between the ages of 20 and 40. The youngest patient was operated on at the age of 6 years.

Indications for operation were continued deterioration of the patient despite conservative measures; a status that made it otherwise unlikely that the patient could return to normal life; complications, both anorectal and remote; acute emergencies of hemorrhage and perforation, and carcinoma. The operation was most commonly done either early in the disease or after ten years.

The curative surgical treatment was first undertaken in three stages—ileostomy, colectomy and excision of the rectum. It is now done in one stage (primary panproctocolectomy) or, if the patient's condition will not permit dissection in the pelvis, in two stages (primary colectomy and rectal excision, or ileosotomy and panproctocolectomy). Resection and anastomosis, with preservation of anal function, were performed on 9 patients.

One of the local complications of ulcerative colitis has been coloileitis, which results secondarily from reflux through the ileocecal valve, which is so damaged by the disease as to become incompetent. One to two feet of the ileum may become involved, but the condition is never sufficiently serious to impair the function of the small bowel. Fissures, fistulas and ischiorectal abscesses were the most common anorectal lesions. Carcinoma was observed in only 4 of the 131 cases, and the 4 patients had ulcerative colitis for ten years or more. Perforation was present in 6 cases of the series. It could easily have been missed, since the classic signs associated with perforation of a hollow viscus into the peritoneal cavity were absent. Hemorrhage was the predominant feature in 4 of the patients. Fulminating disease, such as subject to both reward for success and dire punishment for failure. According to the Code, fees depended upon the social status of the patient: So much for curing a slave, more for curing a free man and a great deal more for curing a nobleman. The penalties depended equally upon the status of the patient: If a slave died or was blinded, as the result of an operation, a fine was imposed; but if a free man, particularly a nobleman, suffered such results following an operation, the luckless surgeon was punished by cutting off both his hands. Intrepid, indeed, must have been the surgeon who would undertake an operation when failure could be severely punished!

Almost concurrent with the culture of the valleys of the Tigris and the Euphrates an equally advanced culture flourished in the fertile valley of the Nile. Medicine, particularly, was highly developed in Egypt. Egyptian physicians were renowned the world over, and patients came to them for treatment from all civilized countries. Fortunately, written records were left to us by the ancient Egyptians on scrolls of papyrus which remained stored in caves and tombs for centuries. When found, they were still readable and decipherable, and gave us a wealth of information about the status of medicine and surgery in ancient Egypt.

The oldest of the medical papyri, in point of origin, is a textbook on surgery. This work, the earliest scientific document ever to be brought to light, is known as *The Edwin Smith Papyrus*. Conceived in ancient Egypt almost 5,000 years ago, it is the most remarkable book in the entire history of surgery. Compiled by an unknown author at a time when medicine was magico-religious, when the vocabulary of science had not yet been created and when the first groping steps in inductive reasoning were being taken, this volume is as logical as a modern textbook in surgery. In addition to its description of clinical methods then in use, it contains astonishingly accurate observations in anatomy, physiology and pathology; magic and mysticism are almost entirely absent. A great many impressions of medical practice in this ancient period may be drawn from this earliest surgical textbook.

The Edwin Smith Papyrus is named for the pioneer American Egyptologist who purchased the scroll from a native dealer in Luxor, Egypt, in 1862. Although unable to decipher the scroll, Smith recognized its significance. Now reposing in the library of the New York Academy of Medicine, the papyrus was originally presented to the New York Historical Society, which subsequently permitted the renowned Orientalist, James Henry Breasted of the University of Chicago, to study the scroll. Dr. Arno B. Luckhardt, Professor of Physiology at the same institution and also an avid student of medical history, lent his valuable medical knowledge for the interpretation of the text. Two preliminary accounts were published in 1922, creating sensational interest among students of Egyptology. The completed translation, with facsimiles, commentary and glossary, appeared in two magnificent volumes in 1930, revolutionizing modern concepts of early Egyptian Surgery.

The original text of this surgical treatise dates back almost 5,000 years, to the early part of the Old Kingdom (3000-2500 B.C.). It had been copied by another surgeon some centuries later, after many of the terms originally used had become obsolete and incomprehensible. Fortunately, that surgeon added a series of "glosses," or explanations, which interpret the meaning of the original text and serve to span the years and the obsolescence. The copy now extant was made much later—about 1700 B.C.—by a scribe who obviously was not a surgeon, and whose many errors, corrections and omissions indicate his unfamiliarity with the material. He transcribed the text but left it incomplete, stopping abruptly with an unfinished sentence in the midst of a description of a clinical case. Thus, the unfinished portion was forever lost.

The text of *The Edwin Smith Papyrus* differs importantly from the other medical papyri so far discovered: Not only is it the oldest in date of origin, but it alone tion. The conclusions drawn are that, although a cause-and-effect relation between spinal anesthesia and the exacerbation of disease has not been shown, spinal anesthesia should not be given to a patient with disease of the central nervous system or the spinal column. This applies to congenital, healed, inactive or active disease. It embraces trauma, bacterial and viral infections, degenerative diseases, neoplasms and systemic diseases with neurologic accompaniments. Exceptions to the rule may be made only when a type of anesthesia other than spinal is potentially more hazardous in the hands of the person administering it.

WARREN A. YEMM, M.D.

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The Tenth International Congress
of the
INTERNATIONAL COLLEGE OF SURGEONS

by invitation of His Excellency Don Adolfo Ruiz Cortines,
President of the Republic of Mexico

will be held at University City, Mexico, D. F., on

February 24 to 28, inclusive, 1957

For further information, please address Secretariat, International College of Surgeons, 1516 Lake Shore Drive, Chicago 10, Illinois.

markably descriptive, and terms are created to designate the structures observed. For the first time in any language, the word "brain" appears. Its convoluted surface is likened to the corrugations that form on cooling slag from molten copper. The pulsations imparted to the finger as they explore the brain exposed in compound fractures, are described as "throbbing and fluttering under thy fingers like a weak place of an infant's crown before it becomes whole." The membranes of the brain (meninges) and the cerebrospinal fluid are mentioned, as are also the sutures of the skull.

Other skeletal structures mentioned are the mandible, including the "ligaments at the end of the ramus which are fastened to the temporal bone," and the temporomandibular joint. The vertebrae, collar bones (clavicles), sternum, ribs and shoulder blades are among the bones discussed. The ramus of the mandible is described, its articular end being compared to the claw of a two-toed bird, as clasping the temporal bone.

Physiologic observations of astounding discernment are recorded by this earliest known natural scientist. The pulse is recognized and counted, antedating Hippocratic observations by 2,500 years. The significance of the pulse as an indication of the patient's clinical condition is described: ". . . like measuring the ailment of a man, in order to know the action of the heart." The heart is known to be the center from which pulsating vessels lead to all parts of the body, thus foreshadowing a knowledge of the circulation.

Astute observations are made too, of the function of the nervous system. The influence of the brain on the action of remote structures is recognized. Paralysis of the legs, resulting from injuries of the brain, is noted, and an awareness is expressed of the relation between the location of the cranial injury and the side of the body involved. Similarly, motor and sensory impairments, resulting from crushing injuries of the cervical vertebrae, are noted.

The clinical evaluation of the cases described bespeaks careful objective examination. Symptoms are noted and physical observations are based on inspection, palpation and even smell. The ability of patients to execute motions, as directed by the surgeon, further completes the clinical picture.

Treatment is, in the main, logical. Expectancy, in the Hippocratic manner, is the keynote of management. The use of sutures or adhesive tape for the approximation of soft-tissue wounds, the employment of splints and bandages and the application of dressings follow logical concepts. Fresh meat is the usual dressing for the first day, perhaps for its hemostyptic value. Soothing and protective substances are applied later. Both heat and cold are used for logically indicated conditions. Dislocation of the mandible is reduced in a manner identical with that employed today.

Of particular interest are the pathologic manifestations of injury and disease. In wounds involving the meninges or brain, meningeal irritation is noted to manifest itself in the form of "stiffness" of the neck, or the patient's inability to "look at his shoulders." Bleeding from the ears and nostrils is regularly described in relation to skull fractures, and "shuffling gait" in relation to brain damage, even in the absence of lacerations of the scalp. The complications of wounds, including infection, tetanus and "exhaustion," are all described. And in fractures of the midcervical vertebrae, priapism, seminal emission and involuntary urination are noted, with appropriately poor ultimate prognosis.

In addition to the direct statements contained in this record of surgical pioneering, interesting inferences may be drawn from this contemporaneous record of medical practice at that time. The gulf between physicians and surgeons is revealed. This being the sole surviving Egyptian papyrus that deals with surgery, it is not certain whether its existence is accidental or indicative of the relative illiteracy of the ancient Egyptian surgeons. The differences between this surgical text and the other manuscripts is, however, striking. Egyptian medicine was deistic, its votaries

The Journal of the International College of Surgeons

PUBLICATIONS

The Journal. The Journal of the International College of Surgeons is one of the important surgical journals in the modern surgical world. The names of many of its contributors are world-famous. It is published monthly and offers from fifteen to twenty original scientific articles in each issue, all of which are *summarized in six languages*. In addition, it carries reviews of important new books and abstracts of the current surgical literature.

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SECOND DIAGNOSIS

Thou shouldst say regarding him: "One having a gaping wound in his head, penetrating to the bone, perforating the sutures of his skull; he has developed - - -, his mouth is bound, and he suffers with stiffness in his neck. An ailment not to be treated."

THIRD EXAMINATION

If, however, thou findest that that man has become pale and has already shown exhaustion,

THIRD TREATMENT

Thou shouldst have made for him a wooden brace padded with linen and put into his mouth. Thou shouldst have made for him a draught of - - - fruit. His treatment is sitting, placed between two supports of brick, until thou knowest he has reached a decisive point.

Gloss A

As for: "Perforating the sutures of his skull," it means what is between shell and shell of his skull; and that the sutures are composed of hide.

Gloss B

As for: "The cord of his mandible is contracted," it means a stiffening on the part of the ligaments at the end of his ramus, which are fastened to his temporal bone, that is at the end of his jaw, without moving to and fro, so that it is not easy for him to open his mouth because of his pain.

Gloss C

As for: "The cord of his mandible," it means the ligaments which bind the end of his jaw, as one says, "the cord" of a thing in (or as) a splint.

Gloss D

As for: "His countenance clammy with sweat," it means that his head is a little sweaty, as (we say), "A thing is clammy."

Gloss E

As for: "The ligaments of his neck are tense," it means that the ligaments of his neck are stretched stiff by reason of his injury.

Gloss F

As for: "His face is ruddy" (*tms'*), it means that the color of his face is red, like the color of *tms'*.t-pigment.

Gloss G

As for: "The odor of the chest of his head is like the *bkn* of sheep," it means the odor of his crown is like the urine of sheep.

Gloss H

As for: "The chest of his head," it means the middle of his crown next to his brain. The likening of it is to a chest.

Gloss I

As for: "His mouth is bound, and both his eyebrows are drawn, while his face is as if he wept," it means that he does not open his mouth that he may speak, both his eyebrows are distorted, one drawing upward, the other drooping downward, like one who winks while his face weeps.

Gloss J

As for: "He has become pale and has already shown exhaustion," it means becoming pale, because he is (a case of) "Undertake him, do not desert him," in view of the exhaustion.

CASE THIRTY-ONE

Dislocation of a cervical vertebra.

TITLE

Instruction concerning a dislocation in a vertebra of his neck.

EXAMINATION

If thou examinest a man having a dislocation in a vertebra of his neck, shouldst thou find him unconscious of his two arms and his two legs on account of it, while his phallus is erected on account of it and urine drops from his member without his know-

TENTH INTERNATIONAL CONGRESS

International College of Surgeons

University City

Mexico, D. F., Mexico

Feb. 24-28, 1957

Prof. Dr. Manuel A. Manzanilla, F.I.C.S., Professor of Clinical Surgery of the Faculty of Medicine of the National University of Mexico, Member of the Mexican Academy of Surgery, Member of the National Academy of Sciences of Mexico and Chairman of the Arrangements Committee of the Tenth International Congress.

The Tenth International Congress of the International College of Surgeons will take place in the School of Medicine, National University of Mexico, University City, Mexico, D. F., on Feb. 24-28, 1957, at the invitation of the Mexican Government and under the honorary presidency of His Excellency Don Adolfo Ruiz Cortines, President of the Republic of Mexico.

The Arrangements Committee of the Congress extends a cordial invitation to national and foreign colleagues to attend this important international surgical assembly. An outstanding scientific program that has aroused extraordinary interest not only in Mexico but in every part of the civilized world is to be presented. Approximately two thousand surgeons have already expressed their intention of attending the meetings. The final program of the Congress is being prepared, under the symbolism of Xipetotec, God of Surgeons according to Aztec mythology, as he is represented in a Florentine manuscript. Meanwhile, preliminary information about the forthcoming program is being presented for the convenience of those who intend to participate.

Honor Roll.—On the Honor Roll of the Congress are the following persons: **His Excellency Don Adolfo Ruiz Cortines,** Honorary *President of the Congress and Con-*

Woman's Auxiliary

United States and Canadian Sections, International College of Surgeons

PRESIDENT'S MESSAGE

Mrs. Clifton L. Dance

At the beginning of this new year, 1957, permit me to extend best wishes for health and happiness to each one of our members all over this beloved country of ours and to our sister members in our great sister country of Canada.

In affairs of the world, the United States and Canada have demonstrated time and again how regard and respect for each other strengthens and enriches both countries, with a unity and harmony that we could wish for the rest of the strife-ridden world. Our Woman's Auxiliary in its own modest way is another example of this beautiful amity. This fact was brought home to us at the meeting of the Board of Directors, held during November at the Home of the College in Chicago. The November 1956 issue of this Bulletin carried a picture of the Board of Directors—women from almost every State in the Union and Canada, many of whom also attended the November meeting. Few of us stop to think of the vast territory covered by Canada or that Canada, too, is a union of "states" running clear across our continent from Quebec to British Columbia.

Mrs. E. Karley Pinkerton, representative from Vancouver, pointed this out at our last meeting, with the result that three more Canadian representatives were appointed to the Board of Directors, to cover the Maritime Provinces and Quebec. They are: Mrs. R. M. H. Power, Mme. Jean-Paul Legault and Mme. Leon Gerin-Lajoie. We already had in addition to Mrs. Pinkerton, Mrs. H. A. L. Portnuff of Yorkton, Saskatchewan: Mrs. Harold E. Baker of Toronto, Ontario; Mrs. Archibald T. Eaton of Hamilton, Ontario, and, of course, Mrs. Lyon H. Appleby of Vancouver, British Columbia, who is an Honorary President.

I have received many fine letters from various members of the Board, expressing satisfaction with the work done and the results accomplished at this last meeting. The committee in charge of revising the *Constitution and By-Laws* submitted a fine comprehensive report. The committee has as its chairman Mrs. Deloise H. Downey of Dover, Ohio, and her assistants, Mrs. Clement L. Martin of Chicago; Mrs. Donald H. Dickerson of Danville, Illinois; Mrs. Manuel E. Lichtenstein of Chicago, and Mrs. Charles J. Weigel of River Forest, Illinois. Each point of the report was considered by the Board, and a full day's work it was, too. The committee will continue its labors until it has produced an acceptable document, properly written in accordance with parliamentary law.

One of the highlights of the meeting was the election of Mrs. Edwin Speidel to Honorary Membership in our Auxiliary. For those who have not yet had the opportunity of meeting Mrs. Speidel, she is the gracious and charming half of the Speidel team, loyal and generous friends of the College of benefactors of the International Surgeons' Hall of Fame. We are proud to add the name of Mrs. Edwin Speidel to our Woman's Honor Roll. If you have not yet visited the Speidel Hall of the Immortals in the Hall of Fame, you have missed a treat. Please see it upon your next visit to Chicago.

I have been trying to convey to our members the exceptional privilege and opportunity that is ours in being welcomed so warmly into the work of the parent body. Our Founder, Dr. Max Thorek, has said it far better and with greater vision of

Gold mask of the god Xipetotec, found in tomb No. 7 of Monte Albán, Oaxaca.
—Photo by courtesy of Prof. Manzanilla

Specialized Sections. — Sessions of the specialized surgical sections will meet in different classrooms of the School of Medicine, the specific locations to be announced.

Congress Office.—The office of the Tenth International Congress will be in a section of the administrative offices of the School of Medicine.

Languages. — The official languages of the Congress will be Spanish, English, French, Italian, Portuguese and German. Simultaneous translation in most instances will be presented in Spanish and English, because of the difficulty of arranging for accurate simultaneous oral interpretation in all of the languages of the International College.

Official Functions. — Five official functions have been arranged during the Congress period. **On Sunday, February 24, at 9 a.m.,** an Honor Guard will place a wreath before the perpetual light, lit in memory of the heroes of Mexican independence at the Column of Independence on La Reforma Avenue; **on Sunday also, between 1 and 1:30 p.m.,** Congress participants will be officially welcomed by the Chief of the Federal District Department in the Palace of the Federal District Department on Constitution Square; **on Sunday evening at 9,** the solemn opening of the Tenth International Congress of the International College of Surgeons will take place in the theater of the Palace of Fine Arts, under the Presidency of His Excellency Don Adolfo Ruiz Cortines, President of the Republic of Mexico; **on Tuesday, February 26, at 9 p.m.,** an academic session dedicated to the Tenth International Congress by the Mexican Academy of Surgery will take place in the auditorium of the old building of the School of Medicine on Santo Domingo Square; **on Thursday, February 28, from 8 to 9 p.m.,** the solemn ceremony marking the close of the Tenth International Congress will take place in the auditorium of the School of Medicine in University City, under the presidency of the Secretary of Public Health and Welfare, Dr. Ignacio Morones Prieto.

Social Functions.—On Monday, February 25, at 9 p.m., a pageant will be shown as a courtesy to the Arrangements Committee of the Congress from the Secretary of Public Education. On Wednesday, February 27, at 9:30 p.m., the banquet of the Tenth International Congress will begin. A reception, the schedule of which is to be announced, will be arranged by the Ladies' Committee for their guests.

Attention to parturition by the Aztec midwife, also from the mural of Chávez Morado in Ciba of Mexico.
—Photo by courtesy of Prof. Manzanilla

Dr. Ayers presented a beautiful gold heart charm, suitably inscribed, to Mrs. Dance in the presence of fifty members of the New York organization and officers representing a number of cultural and charitable organizations of which Mrs. Dance is a member. In his presentation Dr. Ayers extolled the Woman's Auxiliary for the excellent cooperation it has always given the parent body of the International College of Surgeons, and lauded Mrs. Dance for her capability, warmth, geniality and wit.

Members of the New York State Woman's Auxiliary regarded their party for Mrs. Dance as an occasion that will long be remembered and cherished by all who were present, and several of them have written praising comments about the gracious hospitality extended to the group by their charming hostess, Mrs. Mussio.

From left to right, Mrs. John G. Mussio, Dr. Horace E. Ayers and Mrs. Clifton L. Dance.

GROUP PROTECTION AGAINST SUIT FOR MALPRACTICE

Comprehensive Insurance for Members of the United States Section, International College of Surgeons

The response to the group plan for insurance against suit for malpractice, offered to members of the International College of Surgeons, has been most gratifying. The only exclusions from the comprehensive coverage are for criminal acts, for services rendered under the influence of intoxicants or drugs and for the performance of any operation to produce sterility, unless the insured person shall be able to establish pathologic indications for such operations. An extra premium is required for plastic surgery and radiologic therapy.

The underwriters are represented in each State. They will defend any claim or suit alleging malpractice to the limit of liability and will also pay expenses incurred in the defense. A committee of members of the International College will assist in the defense of members covered by the plan. The underwriters will not settle any claim without the consent of the insured person. The master contract will remain with the Executive Director of the International College, and certificates of insurance will be issued to participants. All inquiries regarding individual coverage, partnerships, employed physicians and so forth should be directed to *John L. Krause and Associates, 29 South LaSalle Street, Chicago 3, Illinois.*

TRIBUTE TO THE PRESIDENT OF THE INTERNATIONAL COLLEGE OF SURGEONS, PROF. DR. CARLOS GAMA

Dr. Gama, acknowledging the tribute paid him, clad in the academic robe bestowed upon him by Dr. Matheus Santamaria.

The Board of Directors of the Brazilian Section of the International College of Surgeons, under the chairmanship of Prof. Mauricio de Medeiros, Brazil's Minister of Health, organized a grand ceremonial meeting at the Municipal Library of São Paulo to honor Prof. Dr. Carlos Gama upon his election to the presidency of the International College. The festive occasion was arranged to mark the first time in history that a Brazilian has been accorded so high an office by an international medical organization. It was a solemn event. To the strains of the Brazilian National Anthem, the flags of all nations represented in the International College of Surgeons were massed before the large and distinguished audience.

An academic robe of honor was presented to Prof. Gama by Dr. Matheus Santamaria, who presided. Prof. de Medeiros delivered an address entitled, "Motivation and Intelligence," after which the representatives of many Brazilian medical societies and the leaders of the regional divisions of the Brazilian Section of the College extended their greetings.

Prof. Gama, in acknowledging the tribute, expressed his appreciation to the men officiating over the meeting; to officers and members of the Brazilian Section; to Dr. Fernando Luz Filho, Regional Secretary of the International College for South America; to all national, state, municipal, clerical, civil and military authorities present; to the foreign representatives; to the officers and representatives of other medical and surgical societies; to representatives of the Brazilian Red Cross; to the nurses and the medical students attending; to all who shared in the planning of the meeting; to the representatives of the Brazilian press, and to all who had thronged to express their loyalty to a fellow Brazilian.

He remarked that on Sept. 30, 1949 the Brazilian Section had been installed as a national division of the International College of Surgeons in the very same auditorium, under the chairmanship of Prof. Pedro Calmon, Rector of the University of Brazil. Two years later, he recounted, the First National Congress of the Brazilian Section had convened in the same hall, with North American, Canadian and Argentinian surgeons and officers of the International College present. Prof. Lucas Nogueira Garcez, then the Governor of São Paulo, had presided over that Congress and had also officially inv

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Diplomate, American Board of Orthopedic Surgery

WEST VIRGINIA
William C. D. McCuskey,* M.D., F.A.C.S., F.I.C.S.
60 Fourteenth Street, Wheeling
Diplomate, American Board of Urology

WISCONSIN
George Hobert Ewell,* M.D., F.I.C.S.
16 South Henry Street, Madison 3
Diplomate, American Board of Urology

WYOMING
W. Andrew Bunten, M.D., F.I.C.S.
Bunten Clinic, 630 Boyd Bldg., Cheyenne

HAWAII
Ralph B. Cloward, M.D., F.A.C.S., F.I.C.S.
388 Alexander Young Bldg., Honolulu 9
Diplomate, American Board of Neurologic Surgery
Manuel A. Astor, M.D., F.A.C.S., F.I.C.S.
San Juan Diagnostic Clinic
1913 Avenida Fernandez Juncos, Santurce

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*Newly appointed.
**Appointment to be announced.

Have you arranged to attend the Mid-Atlantic Regional Meeting at The Greenbrier Hotel, White Sulphur Springs, West Virginia, on Feb. 10-13, 1957? If not, do so now. Write directly to the hotel for your reservations. Include your family in your plans. The rates are $21.00 for single and $35.00 for double rooms, American plan. Recreational facilities and gratuities are included in the rates.

- *Emanuel Marques Porto*
- **Benjamin Salles**
- **Pedro Falcão**
- **Ribeirã Preto**
- **Matheus Santamaria**
- **Eduardo Wanderley**
- **Emilio Navajas Filho**
- **Jorge Machado**
- **João Dias Ayres**

"With so loyal and hard working a team, my task is bound to be greatly eased."

Prof. Gama concluded his address with the following comments:

"This is an opportune time to comment on the enormous work accomplished by Dr. Max Thorek, our Founder and the permanent Secretary General of the International College since the inception of our organization. After years of unremitting, exhausting work on behalf of the College, Dr. Thorek was stricken with pneumonia during the twentieth anniversary celebration of the College at Geneva two years ago. Fortunately he recovered and continues to serve as the careful pilot of our organizational ship, steering it onward on its successful voyage to ever greater scientific and humanitarian achievements.

"In reviewing with Dr. Thorek some of the problems of our intricate international organization, I had the opportunity of suggesting a plan for uniform contributions, dues and publication fees throughout the world, eliminating an impractical and confusing system that placed such transactions at the mercy of fluctuations in the values of the currencies of many countries. We also discussed the International Surgeons' Hall of Fame, a magnificent museum created by our College in honor of the great surgeons of the past. Brazilian surgery, with a special room of its own, is represented by four great men: Arnaldo Vieira de Carvalho of São Paulo, Brandt Paes Leme of Rio de Janeiro, Hugo Furquim Werneck of Belo Horizonte and José Pires of Formiga, Minas Gerais. Our country is now among those best represented in the museum. Added to the Brazilian Room recently was the first x-ray set to have reached South America—one made under the personal supervision of Konrad Roentgen. It was originally sent to the State of Minas, where Dr. José Ferreira Pires got it to work after tremendous difficulties, including the need to produce electric energy—not then available in the area—for the running of the machine.

"Brazil's President, Dr. Juscelino Kubitschek de Oliveira, who is also a member of our profession, expressed his recognition of the importance of our mission when he made possible a donation of $5,000 toward the equipment of the Brazilian Room of the Hall of Fame.

"Dr. Thorek and I agree that the International College continue to extend aid in catastrophes as in the past, as we did in World War II, during the floods in the Netherlands and, most recently, during the Hungarian crisis.

"I should like again to thank everyone for the honors extended to me. This ceremony expresses your friendship, fraternity and patriotism. Dr. Matheus Santamaria, my classmate of thirty-two years ago, has received many honors attesting to his qualifications as one of our finest urologists. His tireless efforts at the clinics and hospitals of São Paulo have earned him his place as Head of the Urologic Clinic of Charity Hospital, one of the finest urologic centers of our country. His work on the Technical and Administrative Council of Santa Casa has consisted largely of solving problems of hospital organization. His numerous contributions to professional journals and his scholarly approach have brought him his appointment as Professor of Urology of the University of Medicine and Specialization now being organized at São Paulo Charity Hospital. To us, Matheus Santamaria represents a vital force for the advancement of the ideals of the International College of Surgeons. When he was President of the Brazilian Section, he made good use of this splendid opportunity to promote friendship and solidarity among our members, to the great advantage of our College. He and his co-workers, in preparing this extraordinary meeting,

Report of the Committee on Medical Education of the International Union Against Cancer

Dr. Abel N. Canonico, F.I.C.S. (Hon.)

The summary of a month's activities on the part of the Committee on Medical Education of the International Union Against Cancer was based on a review of the information obtained in answer to questionnaires from 28 of the 41 nations consulted. The questionnaire inquired into the existence or absence of pregraduate courses in cancerology; the extent of pregraduate instruction given and the problems existing in this field; the existence or absence of a postgraduate program in cancerology; the means used for providing doctors not working at university centers with up-to-date information on the diagnosis and treatment of cancer; the existence or absence of specialized publications on cancer, and the mode of distribution of such publications, and the current standard of medical education on cancer and suggestions for improving that standard.

Replies to the questionnaire disclosed that of the 28 nations responding, the United States alone has two professorships in cancer in the 77 medical schools covered by the survey. Germany reports compulsory university courses in cancerology. Three other countries have special undergraduate courses during the last year of professional school, and two provide informal auxiliary courses on cancer free of cost to mixed audiences of graduates and undergraduates. In all, 80 per cent of the nations polled offer no special undergraduate courses, teaching cancerology only as part of such regular courses as internal medicine, surgery and pathology.

Half of the countries replying considered their knowledge of cancer deficient, because of a lack of: coordination and uniformity in teaching: appropriate evaluation of therapeutic possibilities; medical and social awareness in handling the patient with carcinoma; comprehension of the magnitude of cancer problems in relation to pathology, and interest in clinical and experimental research. Half of the countries questioned the efficiency of their teaching programs and expressed the opinion that the most reliable results are attained when students have the opportunity of practicing in tumor wards.

As for training in cancerology on the graduate level, 50 per cent of the nations responding to the questionnaire had no specialized courses; the remainder mentioned annual and sometimes more extensive courses organized by university centers or local cancer associations. Where no specialized courses exist, special symposiums or meetings are the sole sources of graduate information. A small number of countries give graduates intern fellowships in specialized institutes. Generally the attendance is below desired levels at special courses, and the consensus is that training is more satisfactory when internships or fellowships are offered.

Specialized literature is available in about 45 per cent of the nations reporting, but only two-thirds of the published material is of scientific significance and has broad distribution. Most doctors secure their information about cancer from the general medical journals. A limited number of centers utilize consultation by mail.

Few countries are satisfied with their standards of medical knowledge about cancer, and they attribute the shortcomings to inadequate appraisal of professional responsibility; negligence in collecting up-to-date information on the diagnosis and treatment of cancer; incomplete libraries; lack of stimulation for the development of clinical and experimental research; inadequate follow-up, teamwork, compilation of statistics and other aids, and material obstacles to reaching principal working districts through specialized organizations. Some attribute deficiencies to inadequate hospital organization.

When all of the questionnaires shall have been returned and the final report of the Committee on Medical Education is concluded, a number of suggestions will be discussed.

AN APPRECIATION

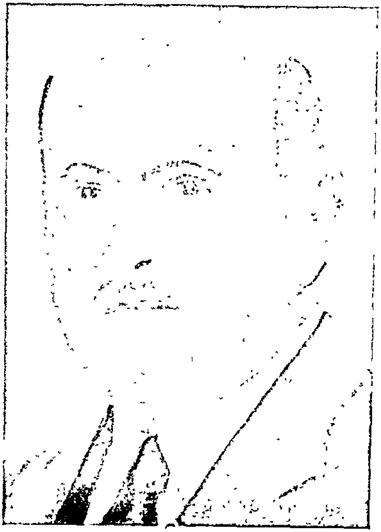
PROF. DR. FRANCISCO GRAÑA,* F.A.C.S., F.I.C.S. (Hon.)

Past President of the International College of Surgeons

The last brilliant International Congress which was held in Chicago last September in conjunction with the twenty-first Annual Assembly of the United States and Canadian Sections has passed into history, and a remarkable record it is in the annals of the International College of Surgeons. We had with us outstanding scientists and distinguished Fellows of the College from all parts of the world as well as master surgeons whom it was our privilege to honor. This Congress has already been chronicled, and it is not my purpose to repeat what has been written in previous issues of this Bulletin.

To one who has been with the College since its infancy, having served as International President and having welcomed the International Congress in my own home city of Lima in 1946 and having journeyed to many lands and often to the United States for these distinguished assemblies, this past Congress was a most memorable one. The reason is one that our younger men may take too much for granted, like sunlight that is missed only on a dull day. We had with us once again our leading spirit, our universal light and, with all, our very human and beloved Founder, Max Thorek. He had "taken it easy" (?) for a brief period, due to the after effects of viral pneumonia contracted in Geneva. His presence among us once again was like the lighting of a guiding beacon.

This short tribute is frankly an appreciation from a devoted colleague of many years' standing, written to give our younger Fellows some small glimpse of the truly great man, with a great heart and exceptional talents, who has opened our collective hearts to the world through the founding of our International College of Surgeons.



Dr. Francisco Graña R.

In the course of human endeavors, men of great vision discover hidden truths, reach new horizons, propose new procedures. Then, after a long time other men complete the work, so that science and society may benefit. Only in rare instances does an idealist, a genius, realize and live to see his dream become a reality. Max Thorek is the rare soul who has received this blessing. It was not, however, a blessing showered down from the skies by the whimsy of Destiny. First, he had the dream, and the beauty of his dream so possessed him with a vison of universal understanding and sharing of knowledge and brotherhood in science that every converse opinion, every setback that weakens

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*Professor of Surgery, San Marcos University, Lima, Peru.

The humanitarian response of the Swiss surgeons was, however, repulsed, and the team of surgeons was barred from legal entry into Hungary with the admonition that if they chose to carry out their intent despite their not having official approval to cross the frontier, members of the team would be regarded as "enemies." The medicaments and the food supplies were, however, permitted unhindered passage into Hungary through the recognized channels of the Red Cross organization. The supplies, which had been donated by members of the International College of Surgeons and by the pharmaceutical houses of Switzerland, reached their destination and contributed to the relief of hunger, illness and wounds.

The response of the Swiss Section to the needs of their hard-pressed, unknown neighbors in Belgium and in Hungary at the time of their greatest need is in keeping with the spirit and the traditions of the International College. The other national sections of the College salute the officers and members of the Swiss Section for expressing the ideals of the College in swift, direct and practical action.

POSTGRADUATE COURSE IN SURGERY OF THE DIGESTIVE TRACT

The second advanced course in surgery of the digestive tract, limited to graduate students, will be conducted under the auspices of the International College of Surgeons at the Hospital de la Santa Cruz y de San Pablo of Barcelona, Spain, under the leadership of **Dr. José Soler-Roig, F.I.C.S.,** Director of the hospital. Collaborating in the teaching program will be Drs. N. Lloret, F. Amoros, C. Ortoll, J. Montaner, P. Arque, A. Sitges, A. Modolell, M. Miserachs, A. Moliner, L. Torre Eleizegui, J. Jou and J. Raventos.

The course, devoted to theory and practice, is designed for graduate students with less than five years of professional practice. Only 15 students can be accommodated in the period of study beginning January 15 and ending May 15, 1957. Participating students will be considered as assistants of the Service and will be obliged to comply with the work schedule of the Service, which consists of:

9:00-9:30 Interpretation and comment on clinical cases
9:30-12:00 Practice in rooms, dispensaries, etc., on a rotation basis. In operating room sessions the students will be instructed in surgical technics applied to diseases of the digestive tract and will participate in operations under the direction of professors
12:00-1:00 Development of theoretic lessons

To secure a Certificate of Accreditation for Advanced Work, the following prerequisites are essential:

1. Continuity of attendance
2. Demonstration of surgical aptitude, judged by the Director and Professors of the course
4. Advance payment of a registration fee of 500 pesetas, to cover teaching expenses

A contest will be held for two places for a year's residency in the Service for a year, starting January 15, 1957. The residents will receive room and maintenance in the Hospital and will present a work which can be rewarded by a medal.

For information, write immediately to: Muy Iltre, Administracion del Hospital, Avenida de San Antonio Maria Claret, 167, Barcelona, Spain.

From the Executive Director's Notebook

Dr. Ross T. McIntire
F.A.C.S., F.I.C.S.

Before discussing the plans for 1957 I would like to go back for a few minutes to mention a most pleasant Christmas party held by the Regent, the Officers and the members of the Credentials Committee of the State of New York in New York City on Dec. 18, 1956.

Dr. John Sauer, who is the Treasurer of the New York State Chapter, is a member of the 7th Regiment—which is one of the famous National Guard regiments of the United States, with a history of participation in all of our wars and with outstanding records in each and every one of them. The Christmas dinner of the New York Chapter is always held in the Armory as a courtesy, extended to Dr. Sauer. A most pleasant social evening is combined with an annual business meeting, at which plans are laid down for the coming year.

This party has been restricted to the officers and members of the Credentials Committee of the State. It has been of such value that a motion was made and passed at the recent meeting to extend this Christmas party to the entire membership of the State. This is a real step forward, and it is expected that at least six or seven hundred of the New York members will take advantage of this means of getting together. Dr. Horace E. Ayers is to be complimented upon the continued activity that takes place the year round. Dr. Max Simon of Poughkeepsie will serve as President of the New York State Chapter during 1957.

Plans for the joint meeting of the New York State Chapter and the Canadian Section are completed, and the meeting at Lake Placid promises to be one of the outstanding affairs of the year. We all remember the great success of the Niagara Falls meeting last year. It is hoped that all who can will journey to Lake Placid on May 30-June 2 for this very fine meeting.

The scientific Congress to be held in Mexico City on February 24-28 promises to be an outstanding success. Prof. Dr. Manuel A. Manzanilla is the President of the Arrangements Committee. The President of the Republic of Mexico will address the Congress on Tuesday morning at 9:00 a.m. in the auditorium of the School of Medicine in University City. Many members of his Cabinet are expected to attend this meeting.

The opening session on Monday, February 24, will have as its speaker Dr. Raoul Fournier Villada, Director of the School of Medicine, National University of Mexico. Dr. Villada is an outstanding surgeon in his own right and will appear later on the program. On the opening day, the Secretary of Public Health and Welfare of the Republic of Mexico, Dr. Ignacio Morones Prieto, will address the Congress on the subject of public health—which is one of the four principal themes of the Congress.

Round table discussions, with eminent surgeons from many parts of the world, are scheduled throughout the Congress. Surgical operations of all varieties will be conducted in the various operating theaters on Thursday, February 28. It is planned to have audiophones installed, so that language translations can be carried on simultaneously.

Surgeons from South America, Europe, Egypt, Japan and the Philippines will appear on this program. A delegation of some three hundred persons from the United States is expected to attend. The closing session of the Congress will be a most colorful meeting, to be conducted on Thursday at 8:00 p.m. by the Secretary of Public Health.

The social events throughout the Congress period will be colorful and spectacu-

IN MEMORIAM

GABRIEL-PIERRE SOURDILLE, M.D., F.I.C.S.

1902-1956

It is with extreme sorrow that we record the death of Prof. Dr. Gabriel-Pierre Sourdille, Professor of Ophthalmology of the Faculty of Medicine of Nantes. Prof. Sourdille was only 54 years old, but the excellency of his character and the outstanding scientific contributions he made to the branch of surgery in which he specialized had raised him to international stature. In 1937 he succeeded his illustrious father in the chair which the elder Sourdille had occupied. Professor Sourdille was a highly intelligent and tireless worker, an outstanding surgeon, a renowned histopathologist and organizer. Although he was expert in all branches of ophthalmologic science, he devoted much of this time to the study of keratoplastics, a field in which he elaborated new concepts and contributed original technics. He was outstanding in his ability to diagnose and treat glaucoma, a topic on which he presented a report at the Congress in New York in 1953.

With the death of Prof. Sourdille, the world has lost one of the kindest, most warm-hearted and most generous of men. He was beloved and admired, and had a very large circle of friends. The world is a better place because Prof. Sourdille lived in it.

—*M. T.*

Gabriel-Pierre Sourdille, Professeur de chirurgie ophtalmologique à la Faculté de Médecine de Nantes, vient de mourir.

Il n'avait que 54 ans, mais sa carrière avait été particulièrement rapide et brillante et le monde entier connaissait ses travaux ou son nom. En 1937 il prit la chaire où son Père s'était déjà grandement illustré et sut lui donner un éclat extraordinaire. Par son intelligence, sa passion du travail, ses qualités de chirurgien, d'histopathologiste, d'organisateur, il féconda son service et en fin un centre d'une activité et d'une richesse exceptionnelles. S'il aborda avec un égal bonheur tous les problèmes de l'ophtalmologie, il s'orienta surtout et l'un des premiers, vers la question des Kératoplasties où il apporta des conceptions neuves et des techniques originales. Il s'occupa avec la même autorité du glaucôme, ce qui lui valut en 1953, l'honneur d'un rapport au Congrès de New-York.

Cet homme affable, chaleureux, d'une bonté sans limite et d'une générosité proverbiale, n'avait en tous pays que des amis. Ceux qui le visitèrent à Nantes, en évoquant le charme cordial de son accueil, ressentiront plus vivement encore leur tristesse.

—*Raymond Darget*

Dr. Gabriel-Pierre Sourdille

programs that attract the surgeons in our families, our Woman's Auxiliary is given every opportunity to participate in the aims of the College. We, in turn, try to make the social aspect of the assemblies equally attractive.

It was our good fortune at our last Congress to be host to the wives of some of the world's foremost surgeons from other lands. Besides Madame Pandalai from Madras, whom I have already mentioned, there was Señora Gama—wife of Prof. Dr. Carlos Gama, of the University of São Paulo, and the International President of the College—beautiful and statuesque as a mythical goddess, yet down to earth in her friendliness. There was the serenely lovely Madame Nicolet from Bern, Switzerland, so genuinely interested in our young people, the sons of our surgeons, studying in her country. There was Madame Raymond Darget from Bordeaux, the epitome of true French charm and chic. There were many others whom I cannot name for lack of space.

It was wonderful to have the opportunity to meet these ladies intimately over tea in our hospitality room and at the more formal functions of the College. We had remarkable evidence on all sides of the understanding and pride that these women, as well as our own, take in their husbands' work and in their affiliation with the International College of Surgeons. Those of us who have been able to attend Congresses held in other countries can never forget their cordiality to us.

The next International Congress will be held in Mexico City, Feb. 24-28, 1957. The organizing committee is headed by Prof. Dr. Manuel A. Manzanilla, and we all had very sincere and cordial invitations from the "*muy simpatica*" Señora Manzanilla. From all indications we shall have a good representation there, and it will be an ideal time to visit Mexico.

I think there will be no doubt as to whether we of the International College have a Woman's Auxiliary, and to every woman qualified to become a member, we invite you again and again to join us.

—Catherine M. Dance

GROUP PROTECTION AGAINST SUIT FOR MALPRACTICE

Comprehensive Insurance for Members of the United States Section, International College of Surgeons

The response to the group plan for insurance against suit for malpractice, offered to members of the International College of Surgeons, has been most gratifying. The only exclusions from the comprehensive coverage are for criminal acts, for services rendered under the influence of intoxicants or drugs and for the performance of any operation to produce sterility, unless the insured person shall be able to establish pathologic indications for such operations. An extra premium is required for plastic surgery and radiologic therapy.

The underwriters are represented in each State. They will defend any claim or suit alleging malpractice to the limit of liability and will also pay expenses incurred in the defense. A committee of members of the International College will assist in the defense of members covered by the plan. The underwriters will not settle any claim without the consent of the insured person. The master contract will remain with the Executive Director of the International College, and certificates of insurance will be issued to participants. All inquiries regarding individual coverage, partnerships, employed physicians and so forth should be directed to *John L. Krause and Associates, 29 South LaSalle Street, Chicago 3, Illinois.*

in the United States, at the Lahey Clinic, and is now serving his own country well.

Another factor in the prevention of sequelae and complications is the performance of chemical studies before any operation on the biliary tract is attempted. Until fifty years ago this was practically unheard of, and many lives were lost as a result because some surgeons did not know of these tests and others did not consider them particularly important. The present era is different. No responsible surgeon nowadays would operate without a thorough knowledge of the status of his patient. Tests for blood urea and blood sugar, a prothrombin test, a sedimentation test when necessary, the various liver functional tests, a complete blood count, a hematocrit reading and urinalysis are the essential laboratory tests.

It is only in the past few years that the prothrombin test has been used. It is the most important one, because it gives one immediately an idea of the functioning liver. It reveals more information than do all the liver tests combined.

Prior to an operation on the gallbladder system it is important to supply the patient with dextrose, in the form of parenteral administration through the veins, or through the sucking of hard candies and additional sugar in the liquids drunk by the patient. The patient should be given at least 500 cc. of 5 per cent dextrose on two successive days before the operation.

Blood transfusions are important, especially in cases of jaundice. To prevent bleeding in jaundiced patients undergoing operations, vitamin K is a sheet anchor against hemorrhage, as has been known since 1932. It was always a sad commentary upon surgery for a surgeon to operate upon jaundiced patients and have them bleed to death as a result of some capillary that had been overlooked at the time of operation. Many things were used to prevent these hemorrhages, such as repeated blood serum transfusions, but all to no avail in many cases. Now, however, with vitamin K and its derivatives available, the surgeon may sleep peacefully with the knowledge that his patient will not bleed to death if he is protected by this drug. The results of this discovery can be placed in the same category as the revolutionary cures obtained after the introduction of the sulfonamides, penicillin and many other preparations.

In all patients with disease of the bile passageways the administration of antibiotics before and after operation acts as a preventive of sequelae and complications after the operation. Penicillin administered postoperatively is an absolute preventive of the effects of the Welch bacillus, which are absolutely fatal within a few hours. No doubt many sudden deaths have been due to this germ. After every operation on the gallbladder, therefore, penicillin in some form should be administered.

Cholecystectomy.—There are some who state that a cholecystectomy should be performed from above downward instead of from below upward. Those who claim that a cholecystectomy should be performed from above downward, state that there is less danger of injuring the common duct. If one performs the "open operation" from below upward, however, there should be no excuse for not visualizing all the structures above the foramen of Winslow. The term "open operation" means that the peritoneal covering over the cystic duct, the common duct, the hepatic artery and the portal vein is incised and spread laterally, so that all the structures in the cystic duct triangle can be visualized. There are rare exceptions when the operation from above downward must be used.

Much has been said in the literature about the length of the cystic duct that the medical school. He served as a urologic surgeon for twelve years, she as a pediatrician for six.

In company with a professor of agriculture from the same university, his wife and two boys, the two doctors and their baby set out for the Austrian border, 200 miles away, in a milk truck. The friendly driver took them to within a few miles of the border. The party walked less than a mile when they were captured by secret police guards and their real troubles began. They were taken to a barn where 60 other refugees were interned; they were kept there for two days and nights. There were no facilities of any kind, only trampled straw on the floor. A friend recognized the agricultural professor and his family and somehow managed to engineer their escape under the cover of darkness. The two doctors never saw their friends again after that night.

On the morning of the third day all of the refugees, including Laszlo and his wife, were herded into a truck which was to take them to a larger and more permanent Russian prison camp. As the truck was being unloaded near the camp, one of the refugees bolted and ran. The two guards took out after him and when they did the other refugees ran wildly in every direction — across fields, down roads and through woods.

"We ran and when we were tired we ran some more," said Dr. Elizabeth. She and her husband and the baby were befriended by a doctor they knew in a nearby city. He put them aboard a bus with other refugees heading for the border.

"The bus driver let us out at the border, but we soon learned that we still had a quarter of a mile to go," Dr. Elizabeth said. "We never knew when we actually crossed the border. We put the baby to sleep and walked and ran for three hours in the dark, always fearful that we might be going the wrong way. Finally we spotted the Austrian watch tower and knew we were safe.

"The baby came through the rough trip quite well, except for a large lacerated swelling on the right temple. This was caused by the jostling he got when we were running and stumbling toward our destination. The baby apparently lay in one position and its head rubbed against the basket for quite some time."

"Have you ever heard of the American Medical Association; do you know anything about the organization?" Dr. Laszlo was asked.

"Of course," he said, adding: "We were well acquainted with your publications while we were at the University, but the name meant much more to us when we reached a refugee physician processing center in Vienna. It was there that we received 500 Schillings ($20) apiece and we will be forever grateful. They told us the money represented contributions from several medical organizations and they mentioned the American Medical Association.

"Hungarian medicine today is—to use an American expression—in a mess. The urologic staff at the university hospital consisted of 20 physicians. On the day we left there were only three and one of them was an old physician who was ill, leaving only two.

"The revolution," he continued, "was started by students. Since we were on the teaching staff, the Russian masters hold all teachers responsible. Even before we left, a general housecleaning of the teaching staff was started. Teachers are being substituted by party followers who can be trusted with indoctrinating the youth in Russian ideologies and practices.

"Neither my wife nor I were members of the party, that is why we were never able to get on the clinical staff of the university. Our jobs carried a great deal of prestige but little salary."

Dr. Laszlo said that the medical university curriculum is being filled, more and more, with military subjects, socialist theory and the Russian language.

"A great amount of time is being spent on nonprofessional studies," he said.

Dr. Laszlo and his wife have no immediate plans for the future exc anastomosis of the bile passageways to the hollow viscera was made. After twenty-five years or more some of the patients are still living and enjoying good health as a result of the operation. A few are still being followed, reporting about once a year.

Biliary Fistulas Following Cholecystectomy.—The potent cause of fistulous bile after cholecystectomy is a stone left in the common duct. It may also be due to an injury of the common duct. When a stone is left in this duct it must be removed to cure the fistula. When the common duct is injured, the flow of bile may cease owing to healing of the duct.

Jaundice, which always follows, must be corrected by one of the many operations devised for its correction. If the aforementioned unrecognized accident occurs, the common duct must be repaired and its continuity reestablished.

Operative Cholangiographic Study.—The necessity of performing secondary operations for the removal of stones in the common duct can be reduced by the use of operative cholangiography. Mirizi in 1932 was the first surgeon to propose this. The technic was practically ignored at that time, and few surgeons used it. In the past ten years, however, it has become a more popular means of detecting stones in the common duct at the time of the operation. It has enabled surgeons to find stones that were missed by palpation of the common duct during cholecystectomy.

To perform this test, there must be absolute team work between the operating room staff and the roentgen department. A darkroom on the operating floor is practically essential for the saving of time. If the common duct is dilated or if there is a history of jaundice, the common duct is injected with 10 cc. of diodrast by means of a ureteral catheter through the stump of the cystic duct. The picture is taken immediately with a portable roentgen apparatus, and the result, after development of the plate, can be obtained within five minutes.

There are some pitfalls in this examination, such as the presence of air bubbles, which resemble stones in the common duct. If one is not sure, the test can be repeated. While the plates are developed a cholecystectomy is performed. A T tube is inserted, another injection of 10 cc. of diodrast is made and additional pictures are taken. If the picture is satisfactory, the wound is closed. If the stone is not removable by means of scoops and biliary forceps, a duodenotomy may be necessary to dislodge it from the papilla of Vater.

Many surgeons do not agree that operative cholangiographic study should be performed, but I have done it in almost 60 per cent of cases. The test has unearthed many stones that would not have been found by the usual methods.

Injury to the Common Duct.—An unrecognized injury to the common duct at the time of operation may be eventually disastrous. This accident has occurred in the practice of practically all master surgeons. When an injury is recognized, the common duct should be repaired at once. Accidents to the common duct should be minimal if the structures around the foramen of Winslow are dissected out as has been outlined. To prevent injury to the common duct, the cystic artery, the cystic duct and the common duct should stand out in bold relief.

If the injury is not recognized within a comparatively short time after operation, the patient will become jaundiced. This entails the performance of one or more operations to correct the deficiency left in the common duct.

Many operations have been devised for repair of the common duct after its destruction, but the ideal operation is one that renews the continuity of the duct. This is often a tedious undertaking, but it can be accomplished if the ends of the

American Medical Association Awards Citation to CIBA for Its Television Series

The American Medical Association, at its Tenth Annual Clinical Meeting in Seattle, presented a citation approved by the Board of Trustees of the A.M.A., to CIBA Pharmaceutical Products Inc., for service to the medical profession through its television program, "Medical Horizons." The program consists of documentary reports on the latest developments in medical science, and is televised each week directly from important hospitals, clinics and laboratories of the United States.

Running for its second full year, the current series of 39 programs will involve more than 100,000 miles of travel on the part of the staff producing it. Among the institutions to be visited are the Mayo Clinic; Duke University; the University of Georgia; the University of Pennsylvania; the University of California; Cleveland Clinic; the United States Naval Base in New London, Connecticut; Rockland State Hospital in Orangeburg, New York, and Sinai Hospital in Baltimore, Maryland.

The citation, presented by Dr. Dwight H. Murray, President of the A.M.A. to T. F. Haines, President of CIBA, was given for the accurate and dramatic portrayal of the story of medical progress and the work and achievements of doctors.

The Research Horizon

Comparison of Billroth I and Polya Technics

Widespread disagreement over the late results of the Billroth I and Polya resections for duodenal ulcer led Drs. J. C. Goligher, P. J. Moir and J. H. Wrigley to survey the effects of the operations among 312 patients who had undergone gastric resection. Their report appeared in *The Lancet*, Feb. 4, 1956. The Billroth I technic was performed in approximately half of the cases. The authors concluded that the Billroth I operation, even though extensive, is unsatisfactory, carrying a 17 per cent recurrence rate within three years, as against 2 per cent after the Polya operation. The Billroth I technic eliminated postgastrectomy symptoms, except biliary regurgitation or manifestations of recurrent ulcer, no more effectively than did the Polya technic. The patient's condition is slightly poorer after the Billroth I resection. The Billroth I technic, when the ulcer is fixed or, after high resection, when it is difficult to approximate the duodenum and the stomach remnant, is technically not feasible. Routine application of the Billroth I technic might increase operative mortality rates. These investigators find no justification for the Billroth I technic as primary surgical treatment for duodenal ulcer. They concede, however, that to relieve severe bilious emesis after a Polya operation, it may be necessary to convert the anastomosis to the Billroth I type in order to eliminate incapacitating vomiting, at the risk of recurrence of the ulcer.

Management of Massive Gastrointestinal Hemorrhage

Drs. Angus Cameron and J. F. Hughes, reporting in the *Delaware State Medical Journal*, July 1956, attribute 8-10 per cent of bleeding in massive hemorrhage from the upper gastrointestinal tract to esophageal varices. The varices in 80 per cent of the cases are secondary to portal hypertension, resulting from extrahepatic, intrahepatic or suprahepatic blocking of the portal venous system. A sudden increase in the pressure gives rise to the hemorrhage. The treatment consists of prompt insertion of a Sengstaken-Blakemore tube for temporary control, failing which intraesophageal suture-ligature of the varices becomes essential. The hemorrhage is controlled by direct ligature through a longitudinal incision, by left transpleural approach, in the esophagus and upper portion

Liver Deaths. — "Liver deaths" were quite common several years ago. Shortly after operation the patient's temperature would rise to 105 F. or more, with malaise, weakness, disorientation and death. Now this complication is rather rare, on account of the preparation of the patients before operation with intravenous dextrose, blood transfusions and the administration of antibiotics. Liver deaths were due to infection or to accidents at operation. Accidental ligation of the hepatic artery accounted for some. It has been proved experimentally that ligation of the hepatic artery ends in rapid necrosis of the liver, causing death. The subject usually dies within twelve to twenty-four hours, and all remedial measures apparently fail.

Acute Pancreatitis.—For a long time in every large clinic, operation for acute pancreatitis was performed as an emergency procedure. The death rate was devastating. Now the symptoms of acute pancreatitis are allowed to subside, and the operative results are much better.

Carcinoma of the Bile Passageways and the Pancreas. — Prevention of carcinoma of the gallbladder demands that every patient with gallstones should be operated upon. All those operated upon in my service have had gallstones. The incidence of carcinoma as observed by many surgeons varies somewhat, but in the larger clinics it ranges from 4 to 6 per cent. The prognosis is usually favorable, as the disease is limited to the gallbladder. When carcinoma attacks the bile ducts, especially the hepatic duct, the case becomes hopeless. Jaundice follows, owing to complete obstruction of the passage of bile. Extension of the cancer into the liver substance makes operation practically useless.

Carcinoma of the papilla of Vater is the type most favorable for resection. Here a modified Whipple operation must be performed. Unfortunately, I have never operated for this condition on a patient who survived for more than two years. The prognosis is guarded on account of metastasis to the liver, which usually occurs.

Carcinoma of the head or body of the pancreas is accompanied with painless jaundice. It is comparatively easy to recognize by a distention of the gallbladder, which follows the law of Courvoisier. The gallbladder is easily palpable through the abdominal wall. In the presence of carcinoma of the hepatic ducts the gallbladder is flaccid, and the same phenomenon is observed in the presence of obstruction of the common duct due to stones.

For relief of the symptoms of carcinoma of the pancreas, I have practically given up the Whipple operation. It is a tremendous surgical procedure, without the permanent benefits that one would expect from it. It has been my custom in the past few years, therefore, to short-circuit the flow of bile from the gallbladder or the common duct to the stomach, the duodenum or the jejunum. Patients have lived two years after this operation, while after performance of the Whipple operation there is great danger of almost immediate death after the operation. A few cases have been reported in which the patient lived from two to five years, but these are the great exceptions.

Ligation of the Hepatic Artery. — One of the serious complications following cholecystectomy is accidental ligation of the hepatic artery. This can be avoided if the bile passageways are properly dissected. Ligation of the hepatic artery usually occurs when one ligates the structures in the cystic duct triangle. On account of the anomalous arrangement of blood vessels in this area, the hepatic artery may be mistaken for the cystic artery. Again, if a careful delineation of the course of the cystic artery is made, this accident should not occur. As the hepatic artery exaggerated movements associated with certain types of cerebral palsy. The promise offered by this operation is far greater than that secured by any other means. Of the 30 patients, 1 died postoperatively.

Primary Rhabdomyosarcoma of the Heart

The first recorded instance of primary malignant growth of the heart in the Philippines is discussed by Drs. Juan Z. Sta. Cruz and Desiderio S. Sta. Ana in *The Journal of the Philippine Medical Association,* May 1956. The patient, an 8-year-old boy, had persistent dyspnea, which had, since the age of 5, recurred in attacks lasting two to three days. By the age of 6, he had repeated attacks of epistaxis and migratory pains of the knees and elbows. Nausea and vomiting began three days before hospitalization, at which time pronounced dyspnea was accompanied by cold sweat and pallor. He was brought to the hospital in semiconscious state. The clinical diagnosis was rheumatic heart disease, active with mitral regurgitation and mitral stenosis; complete heart block (Adams-Stokes), and acute bronchopneumonia. Throughout 63 days in the hospital, the attacks of dyspnea continued to recur and progressive bradycardia was noted. Finally fever, loss of consciousness, convulsions and death followed.

Autopsy disclosed a heart, weighing 249.5 Gm., with a smooth translucent epicardium. A bulging mass, 3.5 cm. in diameter, was noted over the interatrial septum with the tricuspid valve straddled over it. The growth was soft and covered by a smooth, glistening endocardium. The right ventricle was 0.3 cm. thick, the left ventricle 0.4 cm. Originating from the atrial septum was a large pedunculated cauliflower growth, 4 x 3.5 x 2.5 cm., severely obstructing the mitral orifice and occupying a large portion of the left ventricular cavity. The mitral valve was normal, the left ventricle dilated but not hypertrophied. Midsagittal section through the atrial and ventricular septa, through the growth in the left ventricle, disclosed a soft, greyish encephaloid mass, 3.5 x 3 x 2.7 cm. in the atrial septum and perforating the atrial wall continuous to the pedunculated cauliflower mass in the left ventricle. The coronary arteries were normal. Histologic investigation confirmed primary rhabdomyosarcoma. The pronounced obstruction produced by the growth in the mitral orifice simulated mitral stenosis and insufficiency, rheumatic in origin, with complete cardiac blocking.

Report on Crippled School-Age Minors in Sapporo

The medical staffs of the Department of Orthopedic Surgery of Sapporo University of Medicine and the Hokkaido Siishi Gakuin conducted a joint statistical survey in the autumn of 1953 among crippled minors in Sapporo, Japan. Results of the survey are discussed by Bun-ichiro Kawamura *et al.* in *The Sapporo Medical Journal,* February-March, 1955. Of 61,587 students examined, 503 (0.81 per cent) were crippled and 122 of that number were, for various reasons, unable to attend school. Of the 503, 157 were paralytic, 146 of them because of poliomyelitis; 114 had congenital deformities; 70 had tuberculosis of the bone and joint; 63 had spastic disease; 58 had disability resulting from injury; and 48 were classified in a miscellaneous category. Of the group who were unable to attend school 41.5 per cent had congenital deformities. Crippled children who required immediate orthopedic treatment and were also classified as a group expected to improve by specific treatment numbered 412. In all, 67 of the children had never been given any kind of treatment.

It was concluded that many families, out of shame, try to conceal the crippled child; that superstition, ignorance and indifference stand in the way of preventive measures as well as medical treatment; that orthopedic treatment is often beyond the means of the child's family; that an alarming number of children receive either inadequate or harmful, misguided non-

21. Perforation of the gallbladder is a remote complication, provided the patient is starved during the acute attack.

22. Symptoms of cholelithiasis and coronary heart disease are often mistaken for one another. A roentgenogram and an electrocardiogram will usually clarify the diagnosis.

23. "Liver death" was formerly a much-feared complication. Owing to improved preparation and technic, this has been practically eliminated.

24. Acute pancreatitis is a very painful affliction, but it should not be operated on as an emergency condition.

25. Accidental ligation of the hepatic artery is a serious complication. It invariably leads to death.

26. Carcinoma of the bile passageways occurs in about 6 per cent of the patients. Cancer of the pancreas occurs in a large percentage.

CONCLUSIONS

1. Une connaissance approfondie des aspects anatomiques et physiologiques du foie, du pancréas et des voies biliaires est indispensable à l'amélioration des résultats post-opératoires.

2. Bien que les tests hépatiques soient la règle dans certaines cliniques, la détermination du temps de la prothrombine est sans doute le plus important.

3. Les différents tests aident à différencier une hépatite d'une jaunisse par obstruction.

4. Il faudrait toujours pratiquer un examen complet du sang, y compris des tests chimiques et une estimation hématocrite.

5. Des transfusions sanguines devraient être faites dans certains cas, surtout lors d'ictère.

6. L'administration de vitamine K est indiquée afin de prévenir l'hémorragie chez les ictériques.

7. Les antibiotiques sont de règle avant l'opération lors d'affection aiguë, ainsi que dans tous les cas comme mesure post-opératoire (pénicilline contre le bacille de Welch).

8. La cholécystectomie sans cholélithiase est à déconseiller. L'opération ne guérit pas le malade.

9. On a imputé des symptômes tardifs au fait de laisser sur place un fragment important de canal cystique, ce qui en réalité est sans importance car on trouve généralement un calcul résiduel.

10. La cholécystectomie doit être pratiquée selon une méthode connue sous le nom de "méthode ouverte."

11. La cholécystectomie peut être faite de bas en haut, ou de haut en bas. L'auteur préfère la deuxième technique bien qu'il faille parfois opérer en sens contraire.

12. Le drainage est presque universellement utilisé, mais il n'est pas toujours nécessaire.

13. Le drainage semble favoriser la formation d' abcès sub-hépatiques et sub-phréniques.

14. La dyscinésie après cholécystectomie provoque des symptômes pénibles.

15. La pancréatite chronique est une cause fréquente de douleurs dans le quadrant abdominal supérieur droit. La palpation du pancréas est importante pour déterminer le degré d'inflammation de cet organe.

16. Les fistules biliaires après cholécystectomie sont en général dues à un calcul laissé dans le cholédoque.

17. La cholangiographie opératoire est précieuse pour déceler les calculs du cholédoque.

18. L'opération de Whippel pour carcinome du pancréas et de la papille de Vater est plus rarement utilisée que la cholécystectomie. Les diverses anastomoses pratiquées en cas de jaunisse assurent une survie d'au moins deux ans.

19. Il est important de prévenir un rétrécissement du cholédoque. Ce rétré-

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Plastic and Reconstructive Surgery

Immediate Treatment of Traumatic Injuries of the Face

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OF the countless medical accidents confronting mankind today, few present the baffling complexity of the improperly treated severe craniofacial trauma. It is somewhat saddening to observe that while world-wide medical progress is advancing in giant strides and immeasurably improving the lot of humanity, the technologic advances of the past decades have far outstripped human abilities to cope with them. As a result of faster cars and planes, increasingly complex machines and the constant threat of political instabilities dragging us into a disastrous conflict, the emphasis on traumatic surgery is much on the ascendancy. The responsibility for the care of injuries in many instances will rest upon the nearest doctor at hand, regardless of special training. The outcome of the case will often depend on what is done (or, probably more important, what is not done) by the first person to see the case. Anyone who treats craniofacial trauma should be aware of the bizarre psychiatric trauma, let alone the physical complications, that an improperly treated facial injury can bring on. A maimed or crippled person can still assume his place in society; a distorted face, whether on a real or an imaginary basis, presents far greater difficulty in adjust-

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Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-13, 1956.
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15. Die chronische Bauchspeicheldrüsenentzündung ist eine häufige Ursache von Schmerzen in der rechten oberen Bauchecke. Die Abtastung der Bauchspeicheldrüse ist wichtig zur Bestimmung des Grades der Entzündung des Organs.

16. Gallenfisteln nach Gallenblasenresektion lassen sich gewöhnlich auf einen im Choledochus zurückgelassenen Stein zurückführen. Verletzung des Choledochus kann auch eine erhebliche Rolle spielen.

17. Die cholangiographische Untersuchung während der Operation bildet ein wichtiges Hilfsmittel zur Entdeckung von Steinen im Choledochus.

18. Die Whipplesche Operation zur Behandlung des Krebses der Bauchspeicheldrüse und der Vaterschen Papille ist ein seltenerer Vorgang als die Gallenblasenresektion. Die verschiedenen zur Behebung der Gelbsucht angelegten Anastomosen verlängern das Leben des Kranken um mindestens zwei Jahre.

19. Die Vermeidung von Strikturen des Choledochus ist wichtig. Der T-förmige Katheter führt niemals zu Strikturen dieser Art. In den meisten Fällen ist eine fehlerhafte Operationstechnik verantwortlich zu machen.

20. Die Perforation der Gallenblase ist, vorausgesetzt dass der Patient während des akuten Anfalls sich jeder Nahrung enthält, eine ungewöhnliche Komplikation.

21. Einer akuten Gallenblasenentzündung sollte stets Gelegenheit zum Abklingen gegeben werden. In etwa zwei Prozent der Fälle wird es notwendig sein, eine Notoperation auszuführen.

22. Die Krankheitserscheinungen von Gallensteinerkrankung und Kranzschlagaderverstopfung werden häufig miteinander verwechselt. Die Röntgenuntersuchung und das Elektrokardiogramm führen gewöhnlich zur Klärung der Diagnose.

23. Der "Lebertod" gehörte früher zu den sehr gefürchteten Komplikationen. Dank den Verbesserungen in den Vorbereitungen zur Operation und der Operationstechnik ist er praktisch völlig ausgeschaltet.

24. Die akute Bauchspeicheldrüsenentzündung ist eine sehr schmerzhafte Erkrankung, sollte aber nicht als Notzustand operiert werden.

25. Die versehentliche Unterbindung der Leberarterie ist eine ernste Komplikation, die unweigerlich zum Tode führt.

26. Krebs der Gallengänge wird in etwa sechs Prozent der Kranken beobachtet, Bauchspeicheldrüsenkrebs kommt verhältnismässig häufig vor.

CONCLUSOES

1. Conhecimento perfeito da anatomia e fisiologia hepaticas são necessarios assim como do pancreas e vias biliares para obter os melhores resultados pós-operatorios.

2. Das provas funcionais do figado, embora rotineiras em algumas clinicas, o tempo de protrombina parece o mais importante.

3. As provas auxiliam a diferenciar hepatite de icterícia por obstrução.

4. Devem ser feitos sempre hemograma, bioquimica e hematócrito.

5. As transfusões de sangue so devem ser usadas quando indicadas, principalmente nos casos de icterícia.

6. Nas hemorregias dos pacientes ictericos a Vitamina K é o medicamento específico.

7. Os antibóticos devem ser empregados no pre de todos os casos de afecção aguda e no pós em todos os casos. A penicilina e específica do bacilo Welch.

8. A colecistectomia sem colelitiase não deve ser utilizada. A operação não cura.

9. Tem sido muitas vezes responsabilizado como causa de futuros sintomas o coto do cístico. Isto não é importante porque o que se acha habitualmente é um calculo residual.

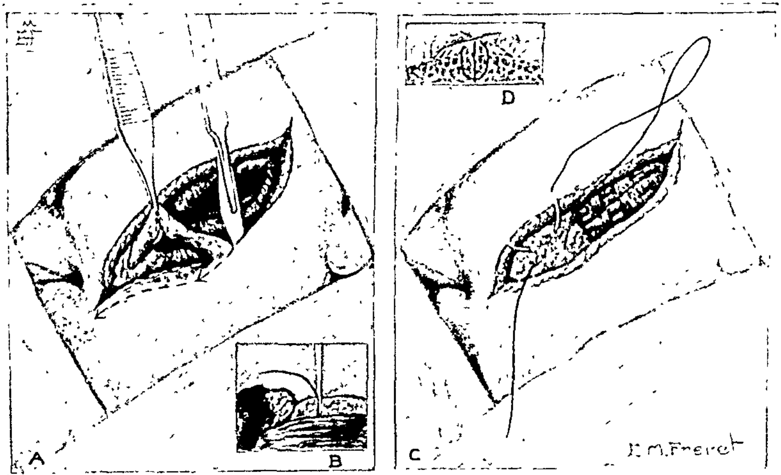

Fig. 3.—*A*, debridement of all devitalized tissue. B, blade at right angle to plane of skin. *C* and *D*, subcutaneous approximation with horizontal mattress sutures in the musculature.

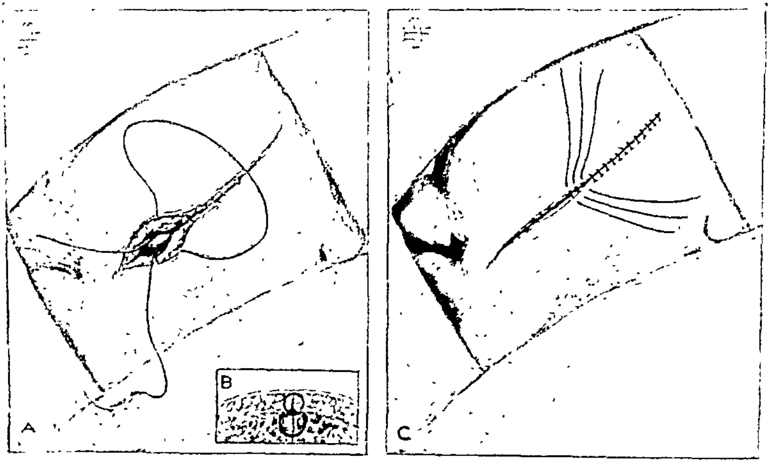

Fig. 4.—*A* and *B*, closure continued in anatomic planes, subcutaneously sutured and buried.

conducto cístico, como una causa de futuros síntomas. Esto no es inportante porque uno encuentra usalmente un cálculo residual.

10. La colecistectomía debe efectuarse por la técnica conocida como "método abierto."

11. La colecistectomía puede efectuarse de abajo hacia arriba ó de arriba hacia abajo. El autor prefiere efectuarla de arriba hacia abajo; no obstante que hay circunstancias en que la operación debe hacerse en el sentido opuesto.

12. El drenaje en el sitio de la operación es casi universalmente usado. Si el campo está seco, ningún drenaje es necesario.

13. Las colecciones subhepáticas y subfrénicas parecen ocurrir mas frecuentemente cuando se usa drenaje que cuando no se usa.

14. La disquinesia después de la colecistectomía produce síntomas molestos.

15. La pancreatitis crónica es causa común de dolor en el cuadrante superior derecho del abdomen. La palpación del páncreas es importante para determinar el grado de inflamación de este órgano.

16. Las fístulas biliares consecutivas a una colecistectomía se deben usualmente a un cálculo residual en el colédoco. La herida del colédoco también es causa poderosa.

17. La colangiografía operatoria es un coadyuvante importante para descubrir cálculos en el colédoco.

18. La operación de Whipple para carcinoma del páncreas y la papila de Vater se efectúa menos frecuentamente que la colecistectomía. Las varias anastomosis efectuadas para atenuar la ictericia dan al paciente, por lo menos, dos años adicionales de vida.

19. Prevenir una estrechez del colédoco es importante. El tubo en "T." nunca ha sido responsable de una estrechez de este tipo. Los errores de técnica durante la operación son la causa de la gran mayoría de estrecheces.

20. La perforación de la vesícula biliar es una complicación remota, siempre que el paciente esté en ayunas durante el ataque agudo.

21. La colecistitis aguda siempre se debe dejar atenuar. La operación de emergencia será necesaria en uno por ciento de los casos aproximadamente.

22. Los síntomas de colelitiasis y de enfermedad coronaria frecuentemente se confunden entre sí. La radiografía y el electrocardiograma usualmente aclaran el diagnóstico.

23. "La muerte hepática," era una complicación muy temida, antes, pero ahora ha sido practicamente eliminada con mejor preparación y técnica.

24. La pancreatitis aguda es una afección muy dolorosa pero no se deberá operar como una condición de emergencia.

25. La ligadura accidental de la arteria hepática es una complicación seria. Conduce a la muerte invariablemente.

26. El carcinoma de las vías biliares ocurre en 6% de los pacientes aproximadamente. El cáncer del páncreas ocurre en un alto porcentaje

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face, emphasizing the absolute necessity of gentle handling throughout, and the fact that the prime consideration in dealing with a craniofacial injury is to make sure of an adequate airway. Hemorrhage must also be strictly controlled, and the extent of the injury investigated. The possibility of damage to the facial nerve must be investigated. The status of the teeth is most important.

In treatment, thorough cleansing of the wound is of the first importance. When tissue must be excised, the excision should be planned to follow Langer's lines (the natural lines) of tension on the skin. The author's technic is described and illustrated.

RESUMEN

Los autores discuten el tratamiento inmediato de emergencia de las lesiones de la cara, enfatizando el constante manejo fino y el hecho de que la primera consideración al tratar con una lesión cráneo facial es asegurar adecuadamente las vías aéreas. La hemorragia debe ser estrictamente controlada y la extensión de la lesión investigada. También debe investigarse la posibilidad de daño al nervio facial. El estado de los dientes es de suma importancia.

En el tratamiento, la limpieza meticulosa de la herida es de primordial importancia. Cuando haya que remover tejido, la excisión debe planearse siguiendo las líneas de Lange (las líneas naturales de tensión de la piel). Se describe e ilustra la técnica del autor.

RÉSUMÉ

L'auteur discute le traitement d'urgence immédiat des blessures de la face, soulignant la nécessité absolue d'une conduite délicate durant tout le traitement. Il est essentiel que les lésions soient accessibles à l'air. L'hémorragie doit être strictement contrôlée, ainsi que l'extension des lésions. La possibilité d'une atteinte du nerf facial doit être envisagée. Le status dentaire est aussi des plus importants.

Lors du traitement, un nettoyage complet de la plaie est indispensable. Lorsque des tissus doivent être excisés, l'excision devrait se faire en suivant les lignes de Langer (lignes naturelles de la tension de la peau). La technique de l'auteur est décrite et illustrée.

RIASSUNTO

L'autore tratta la cura d'urgenza delle lesioni della faccia, sottolineando l'assoluta necessità di manovre delicate e l'importanza di assicurare la pervietà delle vie aeree prima di ogni altra cosa. Anche le emorragie devono essere controllate con cura. Si deve esplorare la lesione completamente, ricercare un eventuale interessamento del nervo facciale ed esaminare lo stato dei denti.

Un'accurata detersione della ferita è assai importante; quando è necessario sacrificare dei lembi di tessuto bisogna orientare la escissione secondo le linee di Langer che sono le linee náturali di tensione della cute.

Viene descritta ed illustrata la tecnica personale.

ZUSAMMENFASSUNG

Die sofortige Notbehandlung von Gesichtsverletzungen wird erörtert unter Hervorhebung der unbedingten Notwendigkeit eines durchwegs behutsamen Vorgehens sowie der Tatsache, dass bei Verletzungen des Gesichtsschädels in erster Linie die Sicherung freier Luftwege berücksichtigt werden muss. Von Wichtigkeit sind ferner sorgfältige Blutstillung,

Incidence of Thrombophlebitis and Embolism in the First Clinic of the Marika Iliadi Maternity Hospital, Athens,* 1947-1952

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FOR well over a century, since the times of Cruvelhier and Virchow, the pathogenesis of thromboembolic disease has been discussed. At present the theory of initial thrombosis appears commonly held in the majority of cases. The mechanism and the factors of blood coagulation in both normal and pathologic cases have been the subject of detailed and inspired research by able scientists.

The profession has now reached the stage of conceiving a complete scheme of the mechanism of blood coagulation, without excluding the possibility of still unknown factors that play a part in the appearance and frequency of thromboembolic disease.

It would be needless to dwell on the general conclusions reached at the Basel Conference, where a table of diseases and operations predisposing to thrombosis was accepted[1] or to mention the various papers and statistics[2] that prove or rather disprove the influence of climatic or seasonal factors on the appearance and frequency of thrombophlebitis. This frequency, possibly substantially reduced during the past few decades as far as severe pyemic infections are concerned, is nevertheless variable in the different statistics according to countries, areas and individual observers. There is no doubt that the more thoroughly scientists learn to search for the initial forms of thrombosis the more will be discovered, and the anatomopathologists will perhaps always have occasion to confirm by postmortem study a certain number of thromboses and emboli that were not diagnosed correctly, or were entirely unnoticed, during the patient's life.[3]

Postmortem diagnosis in cases of embolic disease *badly diagnosed* during life could be a lesson to the profession as to future cases, but knowledge of *unnoticed* embolic disease, though valuable from a scientific point of view, is less valuable from the clinical standpoint. This is due to the fact that, from both the preventive and the therapeutic standpoint, thrombosis, whatever may its cause be, interests and preoccupies the surgeon primarily and mainly because of the danger of embolism, severe or even fatal, that it creates, and only secondarily because of the physical incapacities and other unpleasant functional irregularities it may occasionally cause. Since this danger is present and functional irregularities appear, the size of the thrombus must admittedly have some importance.

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*[illegible] at the [illegible] Congress of the United States [illegible] College of Surgeons, [illegible]

[illegible]

10 of the 34 initially positive dirty cases negative cultures were obtained by swabbing the surface of the skin after preparation for taking the graft. A minced skin culture might be of more value than a blood culture in evaluation of the burned patient's condition.

Samples of skin not positive initially were cultured again in three weeks and in six weeks. In 40 per cent of the initially negative clean cases the cultures were positive in three weeks; in 16.6 per cent, *in six weeks. In the dirty cases, 35.7 per* cent of the initially negative cultures were positive in three weeks and 11.1 per cent in six weeks. It is possible that part of the increase was due to personal handling and air contamination. Other samples may have contained bacteria originally but not on the segment cultured. These categories are not considered valid enough for analysis.

The types of bacteria cultured had no relation to the "take" of the grafts, except in the 3 cases aforementioned. The types cultured were the usual contaminants of skin, nonhemolytic Staphylococcus aureus being by far the most common (Table 2). It is of interest that most of the patients with open wounds were being given antibiotics, with little if any effect on bacterial growth in the skin; at least, no association could be made in our analysis. It appears that skin should be used when taken or, if stored in an ordinary refrigerator, as soon as possible, because nearly 50 per cent of grafts even in clean cases are contaminated from the beginning. Since 68.4 per cent of the grafts in clean cases and 70.9 per cent of those in dirty cases are contaminated by bacteria in three weeks, this is probably a useful limit of time for refrigeration of grafts by this method.

TABLE 2.—*Positive Cultures*

No. of Cases	*Type of Colony*	*Colonies/Plate*
46	Staphylococcus nonhemolytic	1—300
18	Gram-negative rods	1—20
14	Beta streptococcus	2—3
5	Bacillus subtillis	1—3
4	Staphylococcus hemolyticus	1
3	Bacillus proteus	*Plate Covered*
3	Diphtheroids	1
2	Alpha streptococcus	3
2	Aerobacter aerogenes	1
2	Neisseria	1
1	Gram-positive rods	3

SUMMARY AND CONCLUSIONS

One hundred samples of skin have been cultured. Thirty-eight were from "surgically clean cases" and 62 from "surgically dirty cases." Eighteen (36.8 per cent) of the samples from the former group and 34 (54.8 per cent) from the latter reacted positively on initial culture. The "take" of the skin grafts was good (95 per cent or better) in all but 3 cases and these were "dirty" cases in which proteus organisms were combined with nonhemolytic Staphylococcus aureus. As noted in the "clean cases," the skin is difficult if not impossible to sterilize by routine surgical preparation, but bacterial contamination by itself is not the usual cause of graft failure. In the "dirty" cases an increase in the number of initially positive cultures was out of proportion to the number of these cases (6 per cent) in which the grafts were taken from areas adjacent to open wounds. In 10 instances in which negative cultures resulted from swabbing the skin, samples of skin still yielded positive cultures. It is suggested that there is a pooling of bacteria in the skin similar to that observed by Price in the spleen, even when cultures of the blood are negative. Cultures of the skin may be beneficial in evaluating the bacteremia of the extensively burned patient.

bosis frequency of 0.074 per cent. In 1 of these 2 cases of postlaparotomy thrombophlebitis the condition occurred after a subtotal hysterectomy (performed for rupture of the uterus), and the other after removal of a right ovarian cyst, enucleation of a fibromyoma and partial left ovariectomy.

Operations performed solely for fibromyoma (hysterectomies or fibromyectomies) had no such complications. In all laparotomies performed I systematically apply, *in situ* during the operation and intramuscularly for the first four days thereafter, crystalline penicillin G, and frequently streptomycin. During this period I did not follow the system of early ambulation, but encouraged early movement.

In 7 cases the history was free of any previous incident: in 1 case, there had been tonsillectomy and appendectomy, while in still another the history revealed severe rheumatic arthritis, nephritis and a tonsillectomy. In 1 case the history indicated posttyphus phlegmasia alba dolens of the left leg. In the cases of embolism, as has been stated, 1 patient had a well-compensated organic cardiac ailment (mitral), and 1 had septic retention of the placenta.

In all 10 cases of thrombophlebitis the thrombi occurred in the legs: 8 in the left, 1 in the right and 1 in both. The patients' ages ranged between 25 and 42 years.

Of the pregnant women, 5 were primiparae. Two were pregnant for the second time, 1 for the third time, 1 for the fourth time and 1 for the fifth time.

The time of appearance of thrombosis or embolism varied between the fourth and the tenth day after delivery or operation. The treatment applied was absolute bed rest for the first 4 patients and the administration of heparin for the remaining 6. The mortality rate for clinically apparant thrombosis was 0. In neither case of fatal embolism was there any preexistent clinically apparent thrombosis.

Thus, the mortality rate of embolism in 8,539 women was 0.023 per cent. For 7,843 deliveries this incidence was 0.013 per cent: for 696 operations, 0.143 per cent: for 269 laparotomies, 0, and for 427 vaginal procedures, 0.234 per cent.

CONCLUSIONS

In Greece, the danger of thromboembolism seems in general to be less acute than elsewhere. Its frequency is notably increased after cesarean section. This is an additional factor that strengthens the author's theory[5] that there should be no hasty decision to solve all obstetric problems by performing this operation.

The use of antibiotics seems not to have had any effect on the incidence of thrombosis.

Should this theory of the reduced rate of thrombophlebitis in Greece be confirmed in the future, it remains to be determined whether climatic or dietetic factors are involved.

SCHLUSSFOLGERUNGEN

In Griechenland scheint die Gefahr der Thrombusembolie im allgemeinen nicht so bedrohlich wie in anderen Teilen der Welt zu sein. Die Häufigkeit dieses Krankheitsvorganges steigt im Anschluss an Kaiserschnitte erheblich. In dieser Tatsache sieht der Verfasser eine Stärkung seiner Theorie, "dass man keine überstürzte Entscheidung zum Kaiserschnitt treffen sollte, in der Meinung, dass sich damit alle geburtshilflichen Probleme lösen lassen."

Die Anwendung von Antibiotika scheint auf die Häufigkeit von Thrombosen keinen Einfluss zu haben.

Sollten sich die Ansichten des Verfassers hinsichtlich der Thrombophlebitis in Griechenland in der Zukunft bestätigen, dann bleibt noch die Frage offen, ob klimatische eral, however, we have been inclined to advise hearing aids for children with bilateral meatal atresia at a very early age, the exact time depending on the cooperation of the child and the ability of our audiologist to induce acceptance of a hearing aid. In many instances this can be successfully accomplished, so that the child with a relatively normal auditory nerve may learn to speak satisfactorily. If the hearing aid is not satisfactory, a skin-lined opening into the antrum or middle ear cavity may be provided. In our series fenestration has not been necessary.

A normal drum membrane is never present in a patient with typical or complete meatal atresia. Operations to provide a skin-lined opening in the canal region in

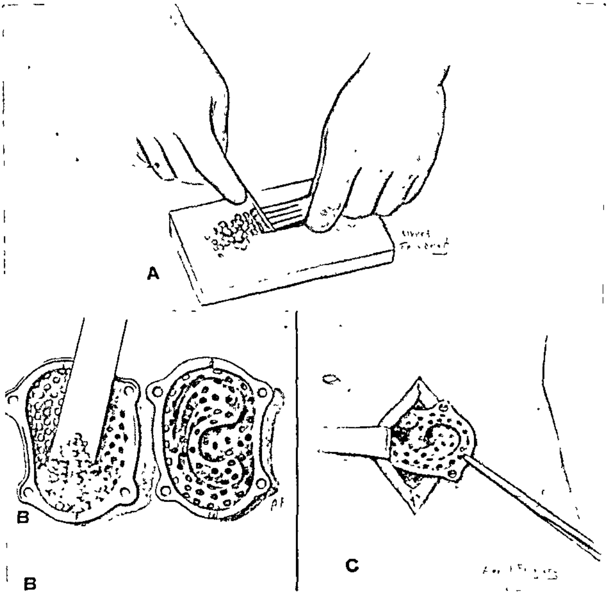

Fig. 1.—Formation of ear framework from diced cartilage grafts inserted in vitallium ear mold. *A*, rib cartilage removed from right side of patient's chest, diced into many small cartilage shavings. *B*, "diced cartilage grafts" introduced into each half of a perforated vitallium ear mold. *C*, halves of ear mold fastened together with vitallium screws, pressing the diced cartilage grafts into the shape of an ear. Mold containing segments of cartilage is inserted in pocket beneath the patient's abdominal skin. During a period of months, blood vessels and connective tissue grow through openings in mold and fasten separate segments firmly, simulating ear. When both auricles are being reconstructed in a young child, diced cadaver cartilage is used to supplement the child's own cartilage, so that there will be sufficient cartilage to fill both right and left ear molds. The operative procedures for the two ears are carried out simultaneously. Thus, the total number of operations for reconstructing two auricles is the same as for reconstructing a single auricle. The vitallium ear molds are made by the Austenal Company of New York City. Medium and large models are available to meet the general requirements of individual cases. *Reproduced by courtesy of* Plastic and Reconstructive Surgery *(3:653, November 1948)*.

Genitourinary Surgery

The Electrourogram

ALFRED W. KNEUCKER, M.D., F.I.C.S.

CHICAGO, ILLINOIS

THE reader should be acquainted first with the fact that electrourograms exist. Then he should realize how simple it is to register electric potentials experimentally as well as from human beings.

All living tissue produces electric currents. This holds true even for tissue cultures and body fluids containing cells that are able to produce currents. These facts have been known for about one hundred years, but they have been forgotten quite often during the past decades. From these currents potentials can be traced and, in certain circumstances, registered.

First, a few words as to the history of the electrograms in general. For more than fifty years action currents and potentials have been traced and registered from the heart since Einthoven published his sensational work in 1903. In 1929 Berger, in Germany, discovered the electroencephalogram. Various electrograms followed, such as electrograms of the stomach, the retina, the uterus and other organs. In 1949 I discovered that potentials can be registered from the renal parenchyma. I first published these observations in 1953. The curves from the renal parenchyma have nothing whatsoever to do with the electroureterogram.* In 1956 I registered potentials from the adrenal glands, the prostate gland and the testicles; in addition, I traced potentials from tissue cultures, from semen and from specimens of urine in which cells (epithelial cells, erythrocytes and leukocytes) were present in quantities abundant enough to produce electric currents.

The basis for the production of electric currents is the arrangement of ions within and outside the membrane and the positive ones outside it (Fig. 1). Formerly it was assumed that there must be an additional nervous impulse, most probably from the hypothalamus, that renders the membrane semipermeable so that the ions can migrate through it; this migration itself produces a difference in potentials that can be measured. I am prepared to demonstrate that no nervous impulse is present or necessary to make the ions migrate, since potentials can be traced from tissue cultures, in which there are obviously no nervous impulses, as well as from body fluids. It must be added that the production of currents does not go on continuously. Tissues and organs "write" for some time and then stop doing so; after some time has elapsed, potentials can again be traced. It must be emphasized, however, that the ability to produce currents ends within one hour in fluids and within a few minutes in excised organs.** Only fresh tissue material, therefore, should be used in these experiments.

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Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-13, 1956.

Submitted for publication Sept. 14, 1956.

*The Electroureterogram was described by R. Baker and J. Hoffer, J. of Urology, December 19[illegible].—The author has found from private communications that his electrourogram is quite often confused with the above mentioned Electroureterogram.

**It appears that the kidney can maintain this ability better than can any other organ.

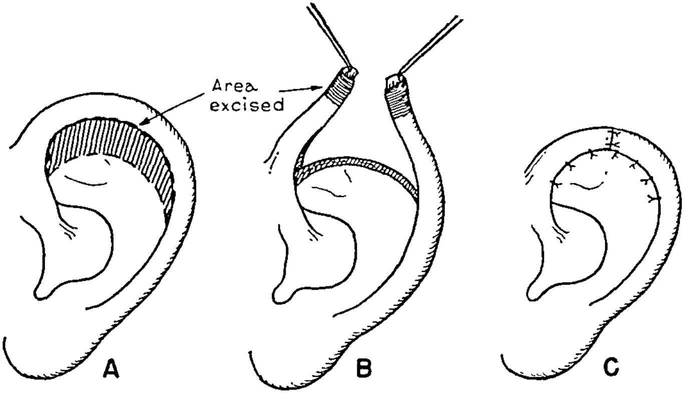


Fig. 5.—Sketch showing how height of reconstructed auricle or that of normal auricle may be reduced by excising a complete segment of cartilage and skin. The two auricles must match in height as well as angle.

years of age and has sufficient costal cartilage to provide structural support for the new auricle. The ear may thus be completed when the child is 5 years old, which enables him to enter school without a marked physical handicap and facilitates adjustment with other children. Since a child's ears are relatively large, the new auricle is made only slightly larger than the normal ear on the opposite side. If inequality in size develops later, the size of the larger ear may be reduced. Usually the larger ear will be the normal one, and it is relatively simple to reduce a normal ear so that it conforms in outline and contour with the reconstructed auricle.

Operative Technic. — Although reconstruction of an auricle is admittedly one of the most difficult problems facing the plastic surgeon, developments in this field during the past fifteen years have resulted in a general improvement of postoperative results. The technics used by different surgeons may appear somewhat diverse, but actually the basic principles are quite similar. In all auricle construction a framework must be provided for the new auricle in the region of the absent ear, and this framework must be covered with skin which, to an acceptable degree, conforms to the external contour of the framework. Transference of the ear lobe, which fortunately is usually present, into normal relations with the skin-covered framework, and the transplantation of skin to cover the posterior surface of the new auricle are standardized procedures.

Unfortunately, after this has been accomplished, some hair-bearing scalp skin is usually present on the upper portion of the new auricle, and a bald or hairless area of skin is seen above the auricle if an Esser inlay has been used. A hairless Wolf graft from behind the normal ear or from above the patient's clavicle may be used to replace the hair-bearing skin on the new ear, and hair-bearing scalp flaps may be brought down to substitute for the bald area above and behind the ear.

In centers where large numbers of auri-

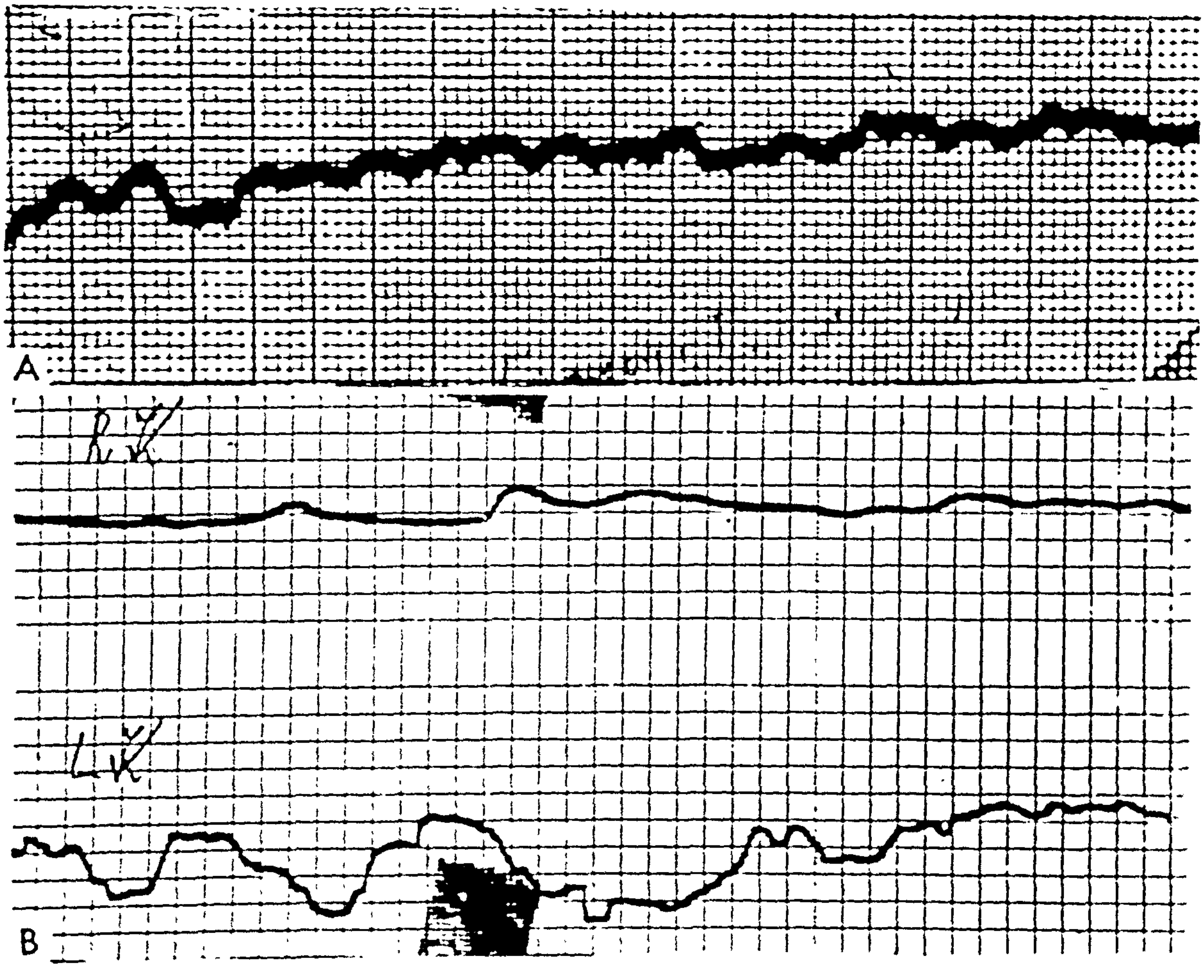
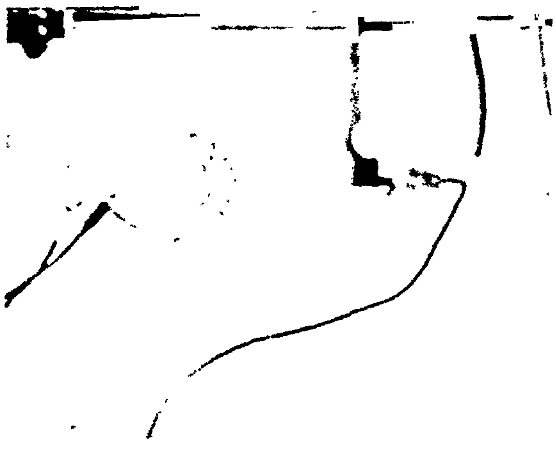


Fig. 2.—A, electrospinephrogram. B, electrourogram. Left kidney is more active than right

a diseased kidney, is highly recommended. The registration can be unipolar or bipolar. Bipolar registration gives the best results. The lead is 1: the active electrodes, the needles, are connected to RA and LA respectively, the needles inserted into the pararenal area close to the lower pole and away from the large vessels, such as the aorta or the renal pedicle. The three inactive electrodes can be needles too, or, to spare the patient additional trauma, [illegible]

[illegible]

per second is recommended. The standardization is usually 1 millivolt; in rare



[illegible]

angle-lobe relation than was detailed and refined reproduction of the normal auricular structure.

The most satisfactory auricles were those partially reconstructed in which a distinct but small concha was present, often associated with an ear canal and normal drum membrane.

CONCLUSIONS

Reconstruction of an auricle should be undertaken with caution *but not with excessive skepticism.* Perhaps the postoperative results are somewhat similar to those obtained from repair of complete bilateral harelip as regards the wide nostrils, short columella and flattened nasal tip. The constructed auricles, in most instances, also show obvious deficiencies in fine structure, but who will deny that both procedures are justified if the patient with an auricular deformity and the child with bilateral harelip are benefited in their integration and self-assurance?

There is a tendency for experienced and critical plastic surgeons to become discouraged by the numerous compromises necessary in total ear construction. These men are sometimes influenced to give up the use of relatively dependable autogenous cartilage as a supporting framework and utilize some form of inorganic material that can be accurately shaped before burial. Unfortunately, these foreign materials immediately beneath the skin appear to elicit more host reaction than do similar foreign transplants in the orbit, or those more deeply implanted as substitutes for absent segments of blood vessels. There are no long-term reports of satisfactory auricles in which inorganic materials were used for the framework.

This is not to state that experimental work with foreign implants should not be continued. More precise knowledge concerning the rejection of homogenous and heterogenous cartilage grafts and successful means to prevent this host reaction may be applied to the rejection of inorganic implants. Until this time arrives, however, the plastic surgeon should continue to use autogenous supporting tissue for reconstructing auricles, especially in children, who have a long life expectancy. Homogenous cartilage may be used for older patients when it is not deemed advisable to remove the costal cartilage, but the use of heterogenous cartilage from the ox or the sting ray is still in the realm of experimental surgery. When diced cartilage is used, a mixture of autogenous and homogenous shavings may actually be desirable, because gradual absorption of the homogenous cartilage tends to thin out the structure of the ear to some extent.

The possibility of removing the chondrocytes from cartilage and utilizing the matrix as a sort of "ideal homograft or heterograft" material without antigen qualities is fascinating but illusive. Attempts to synthesize a cartilage matrix or to inject substances that cause the host tissues to form cartilage have not been successful.

Workers in our Clinic are currently attempting to separate the chondrocytes from the matrix by a different approach, and this may eventually be accomplished. Homogenous and even heterogenous cartilage matrix without cells might provide a valuable grafting material, assuming that the foreign cells rather than the matrix are the antigens that cause the production of hostile antibodies.

SCHLUSSFOLGERUNGEN

Die Wiederherstellung des äusseren Ohres soll mit Vorsicht *aber ohne übertriebenen Skeptizismus* unternommen werden. Die Operationsergebnisse lassen sich vielleicht mit denen vergleichen, die man bei der Wiederherstellung einer voll-

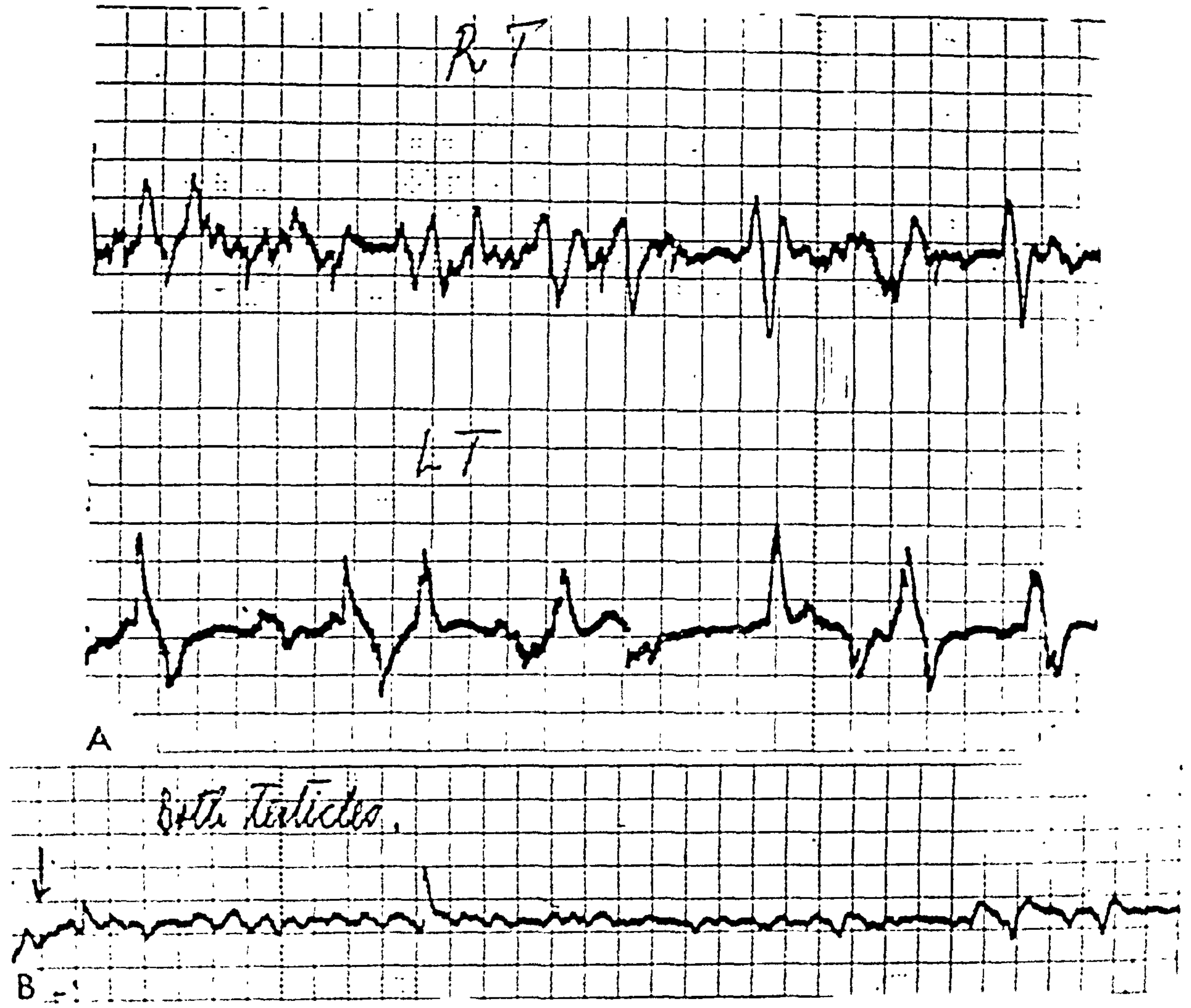


Fig. 6.—*A*, electro-orchidogram of sexually active subject. *B*, electro-orchidogram of sexually inactive subject.

Fractures of the Upper and Lower Jaws

G. KENNETH LEWIS, M.D., F.A.C.S.*

CHICAGO, ILLINOIS

FRACTURES of the maxillofacial region are significant because of their proximity to the base of the skull, orbit, maxillary sinus and nasal fossa. It is important that these fractures be treated properly at the time of injury or as soon thereafter as possible. Undue delay, until bones have undergone ossification in faulty relations, will tend to cause malocclusion and disfigurement. In such a case correction at a later date is accomplished only by means of tedious and multiple operations, and deformity may result which subsequent surgical measures will be unable to correct satisfactorily.

This paper is confined to a discussion of reduction, immobilization and fixation of fractures of the bony tissues of the upper and lower jaws, and various methods of treatment in modern use. Such important aspects as etiology, diagnosis, symptoms and characteristics, soft tissue injuries and their treatment, and the whole subject of bone grafting and definitive reconstruction of the jaw will be discussed in subsequent articles.

Early care of fractures of the upper and lower jaws calls first for an immediate appraisal of the patient's general condition; the first concern is control of hemorrhage and shock. Until shock has been relieved, or when evidence of cerebral damage exists or is suspected, reduction and fixation should be postponed until the patient's condition has been evaluated. During this waiting period the fractured jaw or jaws should be immobilized with some form of emergency bandage. The only exception to postponement is control of concurrent massive bleeding.

Next, the fragments should be immobilized and placed in such apposition that when they are united the anatomic norm and full function, or at least the best possible have been restored. The basic principle is the same for both superior and inferior maxillary fractures, i.e., fixation of the dental arches in normal occlusion.

A large proportion of facial fractures are compound and may be infected, but the infection is superficial, and body immunity will usually care for it. With certain fractures, drainage may become necessary as a precautionary measure.

Methods and Devices for Reduction.—The appliances and methods in general use today for immobilization and fixation of the fractured jaws are varied and numerous. Mention of the more important of these devices and observations on the technic of their application follow.

Intermaxillary wiring is a satisfactory and simple procedure for fixation, doing away with the discomfort incident to the taking of impressions and the fitting of splints. Its use, however, is dependent upon the presence of a sufficient number of good teeth in the upper and lower jaws for anchorage. It requires no complicated apparatus, and the application of wires is simple and rapid. The teeth are in full view throughout the procedure, and occlusion can be constantly observed.

Should the wires become loosened, they

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dling genitourinary disease, sterility and similar conditions, as well as in new physiologic and pathologic approaches to disease in other fields.

RIASSUNTO

Per anni l'autore si è interessato alla ricerca dei potenziali di tessuti diversi dal cuore per la presa di elettrogrammi. Nel 1953 riferì sui potenziali registrati dal parenchima renale e nel 1956 dalle ghiandole surrenali, prostata, testicoli, tessuti in cultura, campioni di urine che contenessero elementi figurati in quantità sufficiente a produrre correnti elettriche. Viene descritta la tecnica. I dati provengono da un lavoro sperimentale e clinico. L'autore pensa che tail elettrogrammi possono aprir la strada a ricerche fino ad ora impossibili e possono fornire nuovi metodi nel trattamento delle malattie genito-urinarie, della sterilità econdizioni analoghe come pure anche in altri campi e malattie.

RÉSUMÉ

L'auteur étudie depuis plusieurs années l'exploration de la potentialité d'organes autres que la coeur, en vue d'examens similaires à l'électrocardiogramme. En 1953 il rapporta avoir relevé la potentialité du parenchyme rénal; en 1956 il réussit à enregistrer la potentialité des glandes surrénales, de la prostate et des testicules, ainsi que de cultures de tissus, du sperme et d'échantillons d'urine contenant des cellules épithéliales, des érythrocytes et des leucocytes en quantité suffisante pour produire des courants électriques. La technique de ces examens est décrite. Des données aussi bien urologiques que biologiques sont le résultat des expériences sur l'animal et des expériences cliniques de l'auteur. Celui-ci estime que l'électrocardiogramme a ouvert la voie à des investigations jusqu'alors impossibles, qui devraient permettre d'inaugurer de nouvelles méthodes de traitement des affections des voies génito-urinaires, de la stérilité et d'autres états analogues, ainsi que de nouvelles voies d'approche physiologiques et pathologiques dans d'autres domaines.

ZUSAMMENFASSUNG

Der Verfasser interessiert sich seit einigen Jahren für die Erforschung der Möglichkeiten, Untersuchungsmethoden, die der Elektrokardiographie ähnlich sind, auch auf andere Körpergebilde als das Herz anzuwenden. Im Jahre 1953 berichtete er, Potentiale aus dem Nierenparenchym aufgezeichnet zu haben, und im Jahre 1956 gelang ihm die Registrierung von Potentialströmen aus den Nebennieren, der Prostata und den Hoden sowie aus Gewebskulturen, aus dem Sperma und aus Harnproben, die genügend Epithelzellen oder rote und weisse Blutkörperchen enthielten, um einen elektrischen Strom hervorzurufen. Die vom Verfasser angewandte Technik wird beschrieben. Sowohl seine urologischen wie die biologischen Laboratoriumsergebnisse stammen aus Tierversuchen und aus klinischen Arbeiten am Menschen. Der Verfasser ist der Meinung, dass die Elektrographie den Weg zu bisher undurchführbaren Forschungen ebnet und schliesslich zu neuen Behandlungsmethoden von Erkrankungen des Harn-und Geschlechtsapparates, der Sterilität und ähnlicher Krankheitszustände führen und ferner das Tor zu neuen physiologischen und pathologischen Methoden auf anderen Krankheitsgebieten öffnen wird.

SUMARIO

Por alguns anos o A. se interessou na exploração dos potenciais funcioais de outras estruturas alem do coração em resposta à metodos de investigação semel-

may be broken off and their roots fractured. The crowns of the teeth may be fractured at the level of the gingival margins, or forced out of their sockets; the alveolar bone may be comminuted and the affected teeth devitalized. Badly damaged teeth should be removed, and any sequestrum of the alveolar process completely detached from the periosteum should be eliminated. Because of its good blood supply, alveolar bone has an excellent chance to survive if not detached.

The most difficult displacement is that in which the alveolus has been driven and impacted into the maxillary antrum. If this is irreducible, surgical intervention is indicated (Fig. 2).

When the alveolus is not displaced, it is sufficient to fix the fragment with buccal arch bars, immobilizing it for thirty days. This fixation can be applied to fractures of either the upper or the lower jaw. When the line of fracture assumes a horizontal course and involves only the alveolar
cess, treatment is chosen according to
relation of the line of fracture to the r
of the teeth. If the fracture passes ac
the occlusal or incisional half of the de
roots, no treatment is required and
teeth may be retained.

Horizontal Maxillary Fracture: In c
of complete transverse fracture ther
separation of the lower maxillary f
ment from the rest of the maxilla.
placement of the fragments may be do
ward, and because of looseness of
fragments the teeth may be in nor
occlusion. Lateral and posterior displ
ment, with disturbance of occlusion, is
uncommon. Impacted fragments may
encountered. Upward displacement
usually be observed in the impacted fı
ment.

When the fragment is displaced do
ward the maxilla is generally loose,
palpation and manipulation will dem

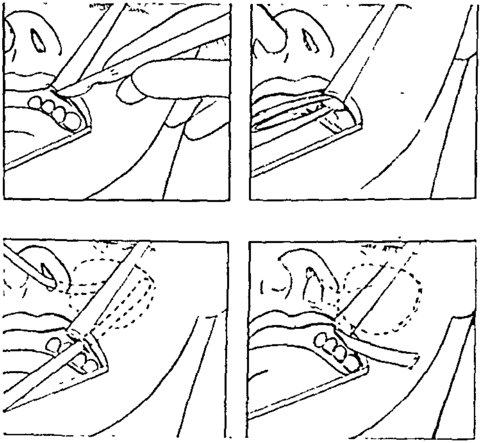

Fig. 5.—Caldwell-Luc opening and packing of antrum with iodoform gauze, bringing gauze out either through oral opening or through an inferior opening in nose. (*Reproduced by permission of the Illinois State Medical Journal.*)

Neurologic Surgery

Decompression of the Fifth Lumbar Nerve and Intervertebral Body Fusion for Low Back Pain with Sciatic Radiation

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ALTHOUGH many articles are written on the subject of low back pain with sciatic radiation, the following observations are presented with the hope that they may have value in the effort to achieve better management of this condition.

In dealing with the conditions that produce low back pain with sciatic radiation there are three main points I should like to develop. The first is that the disturbance of the intervertebral disc may be but a part of a more general dysfunction involving the vertebral and related structures. In my opinion, lesions unaccompanied with frank pathologic changes in the disc should receive more attention. The second is that uncapping the nerves of the intervertebral canal (especially the fifth lumbar) is to be recommended in all cases in which the disc is not obviously the compressing factor. The third is related to the controversial subject of lumbosacral fusion. It has been my policy to follow an intermediate course. There are a few indications for lumbosacral fusion, and an attempt has been made to follow them. The objections to most methods of fusion are (1) there is too high a percentage of cases of nonunion; (2) the period of immobilization following the operation is too long, and (3) there is difficulty in establishing a fusion that would insure permanent separation of the intervertebral spaces posteriorly.

During the early years of my practice in neurologic surgery I began decompressing nerve roots when they were obviously under compression in their intervertebral foramens due to swelling, when adhesions were present and when they were under tension. A few years later, in 1949, an article was published by Crawford, Mitchell and Granger in which they discussed this procedure and the indications for its performance.[1] This article strengthened my confidence in this form of surgical treatment.

Both Bosworth[2] and Cloward,[3] working independently, arrived at the conclusion that one of the functions of the normal intervertebral disc is to hold the vertebral bodies apart, and each devised a traction type of operation designed to prevent loss of intervertebral space with subsequent narrowing of the intervertebral foramen and instability with degenerative changes in the facets. I have done lumbosacral fusions by the Cloward technic on 3 occasions and am happy to report that the reization for twenty-eight to thirty-five days is usually required.

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Presented September 11, 1956 at the meeting of the Neurosurgical Section of the International College of Surgeons, Chicago, Illinois.

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Unilateral fractures with considerable displacement can, as a rule, be reduced by a lateral pull applied to an arch bar attached to the loose fragment. On lateral displacement the loose fragment will be displaced downward, resulting in an open bite. This may be corrected by some form of intermaxillary wiring. The most satisfactory results are obtained by placing a buccal arch bar on the lower teeth (Fig. 6) and applying elastic traction between the upper and lower teeth, correcting the downward displacement. When the loose fragment has been replaced for a day or two, the elastic bands are applied between the upper and the lower jaw and held in place for four to five weeks.

Old Depressed Fracture of the Zygomaticus: Displaced fractures of the zygomaticus with impingement on the coronoid process of the mandible are frequent. They are easily overlooked for a time after injury because of excessive swelling and ecchymosis of the overlying soft tissues. Such a fracture can be reduced soon after the injury; if it is not, conspicuous flattening of the cheek and restriction of motion of the mandible ensue.

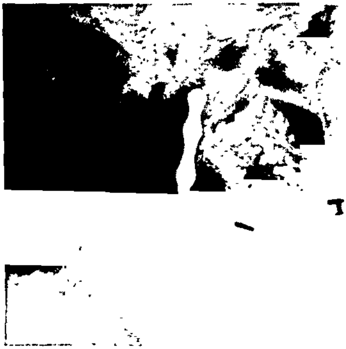

Fig. 10.—Comminuted fracture of ramus reduced with Lane plate, internal wiring and multiple loop intermaxillary elastic traction.

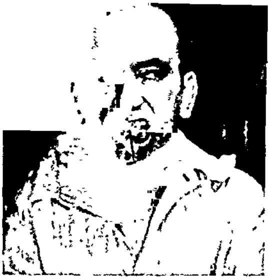

Fig. 11.—Hullihen splint used to control posterior fragment.

Spontaneous healing of this type of fracture, with fixation of fragments, occurs within two weeks. Reduction, therefore, should be instituted early. Failure to reduce such a fracture, which obstructs the excursion of the mandible by impingement of the coronoid process against the depressed zygomaticus, results in permanent inability to open the mouth. Refracturing of the depressed zygomaticus and attempted repositioning usually accomplishes little.

In a former publication[11] I described a method of approach, i.e., to accept the depression as it has solidified and restore the facial contour either with rib cartilage or with cancellous bone. (This also I have previously discussed.[12]) In a series of patients, coroniodectomy successfully accomplished immediate release of the mandible with no further difficulty.

Edentulous Upper Jaws: These present a problem in fixation. Slight displacement of the upper jaw is unimportant and merely calls for a new denture. In fractures of the bones of the middle third of

(6) hypesthesia and hypalgesia in the one or two dermatomes involved; (7) a positive Lasegue sign, with pain radiating down back of the leg involved when it was raised, and (8) diminution of the ankle or knee jerk.

In establishing the diagnosis, the history and the neurologic and roentgen observations, including those at myelographic examination, were considered most carefully.

Disturbances Related to the Intervertebral Disc.—It should be stated that from the beginning of performing operations on the discs I have always made an adequate interlaminar exposure. For better exposure and removal of the extruded segment of disc, the opening was often enlarged laterally. It was this part of the technic that led me to the conviction that compression of the nerve is often due to a combination of forces, especially when there is an increase in the lumbosacral angle. Such forces are: (1) a protruded or prominent disc compressing posteriorly; (2) bony, ligamentous and fibrous tissue compressing from behind and laterally, and (3) prolapse of the vertebrae, which also brings closer together the narrow walls of the intervertebral foramen. My present conception of the problem is that in some cases it is protrusion of the disc that is most evident: in others, prolapse of the fifth lumbar vertebra results in bulging or swelling of the ligamentum flavum or hypertrophy of the fibrous tissue of the joint capsule, or both.

Decompression of the Spinal Nerve.—The aforementioned abnormalities are sometimes not evident unless one removes the inferior articular process of the vertebra above and that portion of the superior articular process of the vertebra below which overlies the nerve in the foramen. This is referred to as uncapping the intervertebral foramen, or decompressing the nerve. The nerve most commonly affected is the fifth lumbar nerve, which passes through the most constricted of the foramens. Another observation that has been noted, particularly in cases of abnormal mobility such as that associated with spondylolisthesis, and in the presence of spina bifida, is that the base of the lamina, which lies next to the fifth nerve at its entrance into the foramen, can cause direct impingement posteriorly on the nerve when extension of that joint is increased.

It is a routine procedure with me to explore both the fourth and fifth lumbar disc spaces and at the same time to probe outward, thoroughly but gently, into the intervertebral foramen from each, feeling for any constriction or tissue that might compress the nerve. If probing or direct observation leaves any uncertainty that there is insufficient room, the nerve is decompressed.

Indications for Lumbosacral Fusion.—It is my opinion that primary fusion should be done (1) when the patient has a long history of pain in the lower part of the back or in the legs; (2) when there is roentgen or operative evidence of instability of the lumbosacral joint—for example, increase in the lumbosacral angle, prolapse of the fifth lumbar vertebra on the sacrum and subluxation of the fifth lumbar vertebra on the sacrum; (3) when the articular facets have been removed because of complete uncapping of the intervertebral canal on both sides, and (4) when the heavy body structure and strenuous occupation of the patient would tend to weaken a joint after the disc had been removed. A spinal joint is fused to make the adjacent vertebrae immovable with respect to each other, because the symptoms of low back pain and nerve root irritation are due to uneven pressure and motion between the articulating facets of the adjacent involved vertebrae. It is also evident from the investigation of Stilwell[5] that pain fibers from the anterior longitudinal liga-

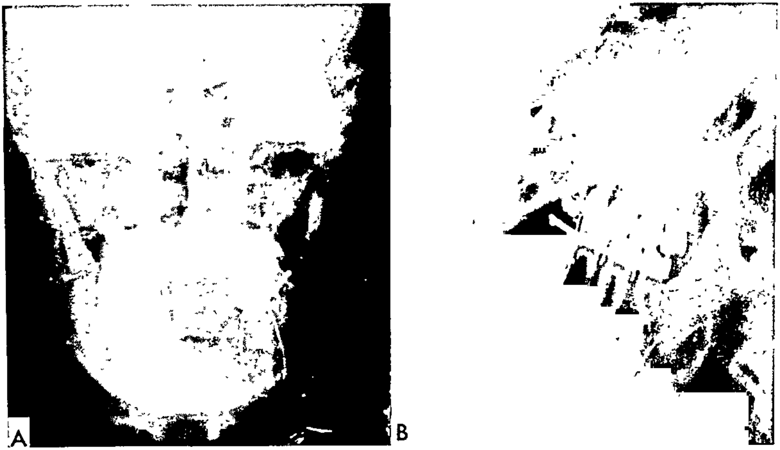

Fig. 16.—*A* and *B*, circumferential wiring used when teeth are either absent, too few or too insecure to afford attachment for wires, or when angle of fracture is such that circumferential wiring will hold proximal and distal fragments together.

dyles, according to Burket.[16] The prognosis is guarded when this accident occurs, because bony ankylosis nearly always follows, necessitating single or double condylectomy.

Fracture of the Coronoid: Fractures of the mandible in which the coronoid is separated from the ramus are infrequent. Reduction is rarely indicated, because, as a rule, there is little or no displacement of the body. The treatment is immobilization with intermaxillary wiring, with the teeth in occlusion, two to three weeks. If the mandible is edentulous, fixation is usually not indicated. It is only from compound fractures of the coronoid that trouble may be anticipated.

Fracture of the Ramus: The ramus of the mandible has strong muscle insertions on both sides, which usually prevent displacement and adequately control the edentulous fragment. The zygomatic arch is commonly associated with this particular fracture, and motion may be limited on healing (Fig. 9).

Treatment of fracture of the ramus *per se* is most easily accomplished by bringing the teeth into occlusion and maintaining fixation with intermaxillary wiring for two to three weeks.

Fracture at the Angle: Displacements encountered here are caused by the attachments of the elevator muscles, which pull the posterior fragment forward, upward and inward. The fragment describes an arc around the temporomandibular joint, if not resisted by the anterior fragment in the line of fracture. Viewed from above, the angle of the line of fracture may be such as to preclude inward displacement (See Fig. 8). Fracture at the angle may present a combination of circumstances whereby it is prevented from inward displacement but can be displaced forward and outward. In comminuted fractures the anterior fragment will have no control of vents further penetration and a ½-inch dowel is inserted into the drill hole. The vertebra spreader is then removed, and one observes that the dowels are held in a viselike manner by the falling together of the vertebrae. The dowels being countersunk ¼ inch prevents pressure on the dura or the nerve root posteriorly. In cases of more severe instability of the joint, an H bone graft taken from the ilium was inserted between the base of the spines of the fifth lumbar and first sacral vertebrae after they had been notched. When the vertebrae fell together, this also was locked into position.

It should be pointed out that there is cortical bone at one end of the dowel and sometimes at both ends, and that the drill removes the epiphysis and the cancellous bone beneath it to a depth of not more than ¼ inch. The cancellous bone deep within the body of the vertebra has large spaces and is soft, whereas the cancellous bone beneath the epiphysis has small spaces and is harder. For this reason it does not collapse on either side of the dowel. The compression between these surfaces stimulates osteogenesis.

After the operation my patients remained in bed for seven days and were moved, or permitted to move, using the "log-rolling" technic. They were permitted

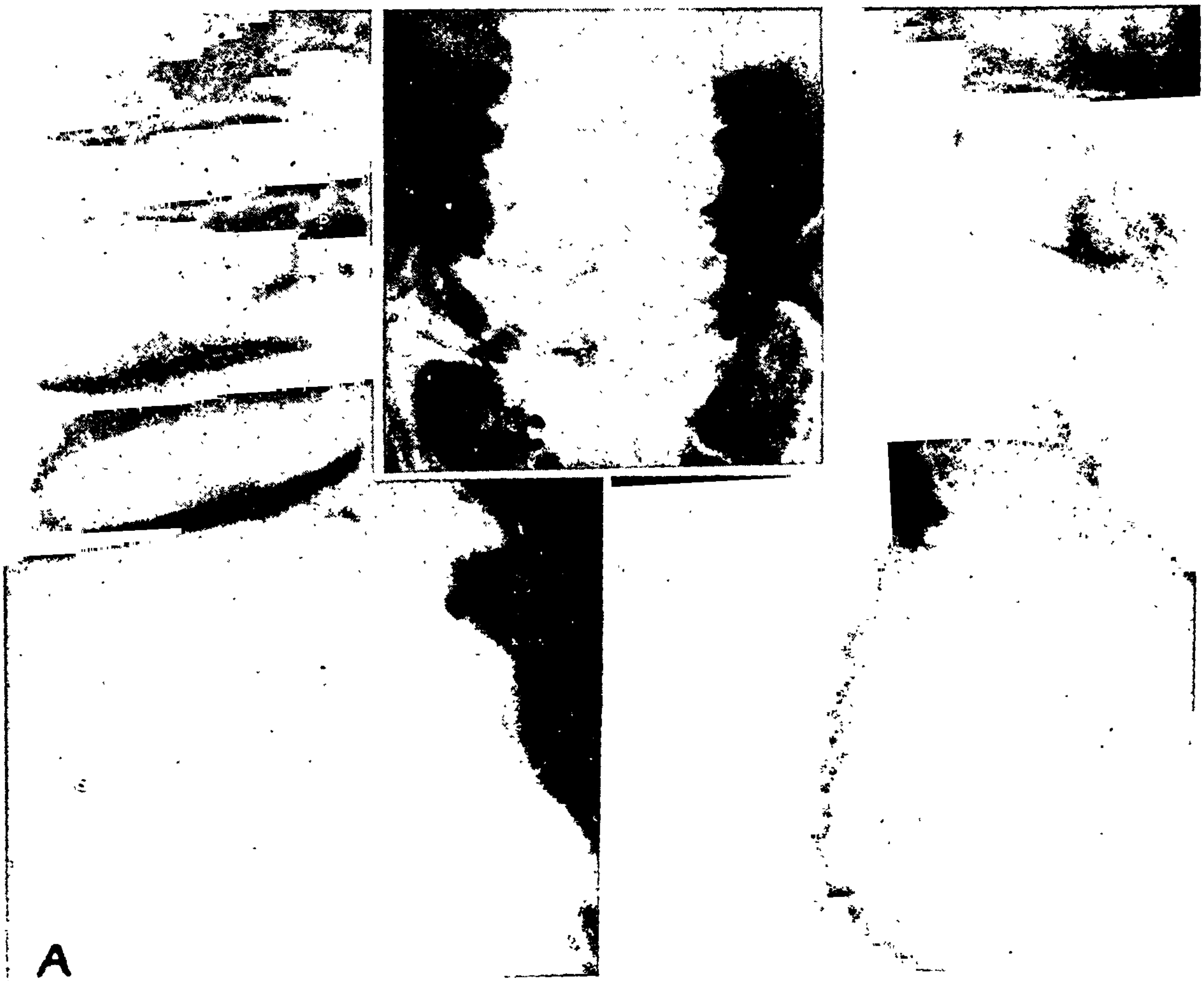

Fig. 2.—Joint between vertebrae, fourth and fifth lumbar vertebrae. *A*, before fusion; *B* and *C*, after fusion.

no teeth present, the posterior fragment is displaced upward by the elevators and forward and inward by the rotators; the anterior fragment is depressed, and the midline of the mandible is diverted to the injured side. It is for this reason that the tooth in the posterior fragment is preserved, even though it may be in the line of fracture. A practical method of immobilization here is a modification of the technic of Lenormant and Darcissac, as previously credited to Fry and his co-workers. If bone loss is present, displacement forward is greater, and advantage may be taken of this to facilitate union, movement forward being prevented to the extent that contact is lost with the anterior fragment.

Fracture of the Body of the Mandible: If a sufficient number of teeth are present in the mandible and maxilla, they are held in occlusion with intermaxillary wiring. Displacement is slight, owing to action of the teeth, but if teeth are scarce and the injury severe great deformity occurs, depending on the line of fracture. When the fracture is vertical, the posterior fragment is displaced upward and the anterior fragment downward by the depressor muscles attached. The line of fracture is usually oblique, and the overlapping fragments tend to accentuate the displacement owing to the action of the external pterygoids.

If multiple fractures occur in the body, a typical deformity results. The middle fragment is generally displaced downward and backward and the two side fragments upward and toward the midline. The amount of displacement depends upon the obliquity of the lines of fracture. The backward displacement of the middle fragment may seriously interfere with respiration, and, owing to loss of control of the tongue, swallowing becomes difficult and the patient is unable to control the saliva, with resultant dribbling. Treatment may be accomplished by circumferential wiring, intermaxillary wiring, the use of buccal arch bars or other methods as indicated (Figs. 16 and 17).

Fig. 17.—Comminuted fracture of body of mandible held in occlusion by intermaxillary wiring and buccal arch bar.

Fracture of the Symphysis: This fracture may be single, multiple, or comminuted. Single fractures are, as a rule, vertical, lying either between the central and lateral incisors or the lateral incisor and the canine, and there is little displacement of the fragments (Fig. 18). Intermaxillary wiring is usually adequate for immobilization.

Multiple fractures with teeth present, if seen early, may also be immobilized by intermaxillary wiring. If the jaw is edentulous, circumferential wiring may be used over a splint or a denture. The Kirschner type wire technic, previously mentioned, is also ideally adaptable to these fractures.

Comminuted fractures of the symphysis, when seen early, can be maintained in position by connecting the lower jaw to the upper with a buccal arch bar (Fig. 19). When seen late, this type of fracture is reduced by means of separate arch bars in statistical significance to those of Wiltberger, who, over a two-year period, performed intercorporal or body-to-body fusion on 54 patients. Roentgenograms of 48 of these patients revealed 6 nonunions (13 per cent).

The forty-eight cases included 26 in which bilateral dowel fusions were performed, with 2 nonunions (7.5 per cent) and 20 in which single dowel fusion was done, with 4 nonunions (18 per cent). For this reason I have done bilateral fusions in all my cases.

Of the results in his series of cases, Wiltberger considered 86 per cent classifiable as satisfactory. The remaining 14 per cent are not satisfactory in that the patients still have severe pain in the legs or back.

The 14 per cent of unsatisfactory results might have been reduced still further if nerve root decompressions had been indicated and performed.

I have done 25 nerve root decompressions during the past ten years. In all of these there was offending pathologic change, and after the nerve root had been decompressed there was improvement in that the pain and paresthesias subsided in time or were greatly relieved. Paresthesias were the persistent symptom in cases in which relief was not complete. This was due to permanent damage to the nerve root.

CONCLUSIONS

Complete removal of the herniated or degenerated disc through an adequate exposure between the laminae is advocated.

In some cases of well-marked disease of a disc there is also nerve compression in the foramen, which explains the persistence of pain after removal of the disc. It is advocated that such a nerve should be decompressed by uncapping the intervertebral canal.

Primary fusion is advocated when there is a long history of pain in the back or legs and in which there is roentgen or operative evidence of instability to make this procedure justifiable. In the author's opinion, intervertebral body fusion is the procedure of choice. In a limited series of cases the prefitted double dowel technic for fusion of intervertebral bodies has produced the best result in the author's hands, resulting in considerable reduction in postoperative care, confinement in the hospital and the period of immobilization. Patients engaged in the heavier forms of work have been able to return to work six months after the operation; 1 patient, an office clerical worker, returned to her employment at the end of three months.

The technic recommended is precision bone grafting with accurate approximation of autogenous bone, which should, by its nature, be more apt to "take" than would a less accurate graft. The desirable effect of contact compression on osteogenesis is utilized in this type of fusion.

The loss of blood is at a minimum, for the incision of the donor site is only a small one that can be easily and quickly closed. Bleeding from the drill holes between the vertebrae is very slight, and the dowel, when placed in the hole and locked into position, prevents excessive bleeding.

Earlier mobilization is considered due in part to severance of pain fibers in the anterior longitudinal ligament at the time the protruded disc is excised.

CONCLUSIONS

L'auteur recommande l'ablation totale du disque hernié ou dégénéré en pratiquant une ouverture suffisamment large entre les lamelles. Dans certains cas d'affections discales bien dessinées, il y a également une compression nerveuse dans le foramen, qui explique la persistance des douleurs après l'ablation du disque. Il est indiqué

In uncomplicated fractures, limitation of motion on removal of fixation disappears usually within seven to ten days on normal use of the mandible. On resumption of chewing, talking and exercise, normal function is rapidly restored except in cases of extensive gunshot injuries in the region of the ramus, when limitation of motion may result from the formation of cicatrices, true joint ankylosis being rare.

COMMENT

For fractures of the upper and lower jaws in children and infants, interdental wiring may be done with a light wire. Owing to the shape and instability of the teeth in these patients, however, this wiring is usually difficult to control, and the application of a Roger Anderson splint or some form of dental splint cemented to the teeth will usually hold the fracture much better without jeopardizing the teeth of these youngsters. Fractures in infants are infrequent.

Many procedures, e.g., the application of wires, are better performed without anesthesia. Anesthetics are indicated, however, for operations upon the fracture areas when force may be applied. Local anesthesia is not used in the reduction of facial fractures if the surgeon is thereby hindered in the performance of the operation. Intravenous and rectal anesthetic agents are also avoided. Inhalation endotracheal induction is the simplest method, since the equipment used for it is the least complicated and by its use an adequate airway is maintained. The endotracheal tube, with complete occlusion of the pharynx, represents the maximum of safety for the patient and convenience for the surgeon. It enables the anesthetist and his apparatus to be well away from the field of operation.

In the repair of mandibular fractures particularly, general anesthesia is avoided whenever possible, especially when the upper and lower jaws are to be wired together. This is because postanesthetic vomiting may cause asphyxia during recovery from anesthesia and is likely to loosen or break the wires. For this reason and because of the strain placed upon the fixation and the teeth during the waking period, block or infiltration anesthesia is preferred and has been found sufficient in most mandibular fractures. When a general anesthetic is employed, the wiring is performed during the period of anesthesia. For repair of fractures of the zygomaticus, general anesthesia is the rule.

In operations upon the jaws, a short McGill tube is passed through the nose until the patient is completely awake, to insure an adequate postoperative airway. As an added precaution the patient is turned on the side or abdomen, with the head turned, in order that any drainage may run from the mouth by gravity, rather than depend upon suction to clear the throat of any blood or debris.

During the treatment of jaw fractures it is not necessary to remove the teeth in order to feed the patient. Many patients already have one or more teeth missing, or there is usually some space behind the last molars. The use of the stomach tube passed through the nose would be preferable to the removal of sound front teeth, but this is seldom necessary except temporarily and in cases of extremely severe injury.

It is essential that a patient with a fractured jaw or jaws receives sufficient caloric intake to maintain his weight and physical strength. He should be able to assimilate foods similar to those consumed prior to the accident, by pregrinding and massaging between the teeth. A well-balanced diet should be given and the patient encouraged to eat. Vitamins, when indicated, may be given for supplementation.

wird, einen grösseren Blutverlust.

Der Verfasser nimmt an, dass sich die frühere Mobilisierung zum Teil durch Unterbrechung schmerzempfindlicher Nervenfasern im vorderen longitudinalen Ligament zurzeit der Exzision des verlagerten Diskus erklären lässt.

CONCLUSIONI

Si auspica la completa asportazione del disco erniato o degenerato attraverso una opportuna apertura tra le lamine. In alcuni casi di ben definita malattia del disco esiste anche una compressione del nervo nel foro di coniugazione, il che spiega la persistenza della sintomatologia dolorosa dopo la asportazione del disco. Si auspica la decompressione di tale nervo attraverso l'allargamento dello spazio intervertebrale.

Si consiglia l'artrodesi nei casi in cui vi è una lunga storia di dolori nel dorso o nelle gambe e in cui una instabilità vertebrale chirurgicamente o radiologicamente dimostrata giustifichi tale intervento. Secondo l'autore questa artrodesi vertebrale rappresenta l'intervento di scelta. In una limitata serie di casi la predetta tecnica di artrodesi gli ha dato i migliori risultati consisteni in una consederevole riduzione delle cure post-operatorie, del periodo di ricovero in ospedale e della durata dell'immobilizzazione.

Pazienti occupati in lavori leggeri hanno potuto riprendere il lavoro sei mesi dopo l'intervento; un paziente lo riprese dopo tre mesi.

Il particolare di tecnica più importante è l'accurato innesto di osso autogeno che per la sua stessa natura ha più tendenza ad attecchire di un altro innesto praticato con tecnica meno accurata. In tale tipo di artrodesi si conta molto, agli affetti dell'osteogenesi, sullo stretto contatto. La perdita di sangue è ridotta al minimo poichè l'incisione nella sede del prelievo deve essere così breve da poterla chiudere nel modo più facile e rapido. L'emorragia dai fori di trapano intervertebrali è molto lieve e la stecca, una volta piazzata nei fori, la arresta. Si pensa che la precoce mobilizzazione sia anche dovuta alla sezione di fibre nervose nel legamento longitudinale anteriore nel tempo stesso in cui viene asportata l'ernia del disco.

CONCLUSOES

O A. defende a remoção completa do disco herniado ou degenerado atravez uma exposição correta entre as lâminas. Em alguns casos de afecção típica de um disco existe compressão de nervo no antebraço, fato que explica a persistência da dor apos a excisão do disco. Pensa o A. que a descompressão do citado nervo poderia ser obtida pela exposição do canal intervertebral.

A fusão primária é defendida nos casos em que existe uma longa historia de dor lombar ou nas pernas e naqueles em que o diagnóstico radiológico ou operatorio evidencia a indicação cirúrgica desse mêtodo. Pensa o A. que a fusão intervertebral é a operação de escolha. Numa limitada serie de casos a técnica do duplo "dowel" prévio para fusão dos corpos vertebrais mostrou-se muito boa porque, em mãos do A., reduzio a hospitalização, os cuidados pós-operatorios e o periodo de imobilização. Pacientes com profissões das mais pesadas puderam retornar ao trabalho em seis após a operação; um doente que era secretário de um prelado poude retornar ao trabalho depois de três meses.

A técnica exige precisão na enxertia óssea pela adaptação e fixação corretas do enxêrto autogeno que é, por sua natureza, mais pesadas puderam retornar ao trabaljável de um contacto por compressão na osteogênese é alcançado nesse tipo de fusão óssea.

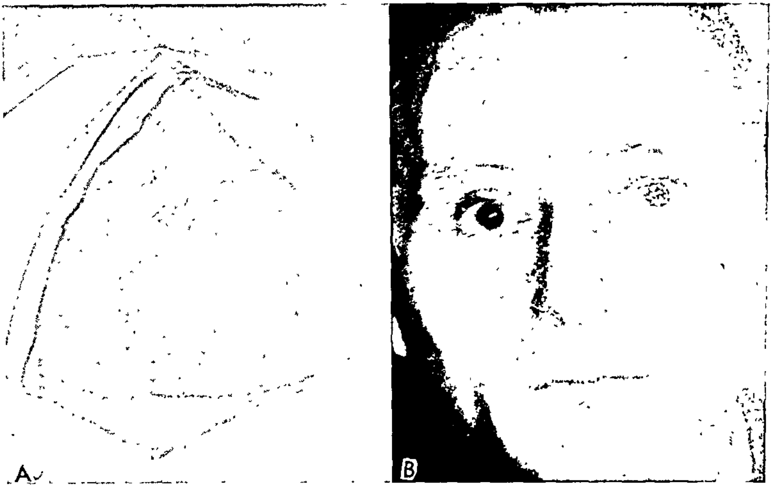

Fig. 1.—*A*, extensive defect of frontal region following radical resection of frontal bone for chronic osteomyelitis thirty years earlier. In recent years preserved cartilage has been inserted on several occasions, only to become absorbed. *B*, patient one year after reconstruction with autogenous bone graft.

In recent years we have encountered a series of cases of extensive defects of the scalp and cranium.

REPORT OF CASES

CASE 1.—H. P., a 50-year-old man, illustrates the absorption of preserved cartilage graft and later permanent correction with autogenous iliac bone. Thirty years ago this patient underwent a radical resection of the frontal bone for osteomyelitis. On several occasions thereafter preserved cartilage was inserted, only to become absorbed. A severe paresthesia developed along the distribution of the right supratrochlear nerve, with a trigger area in the scar. Figure 1*A* shows the extensive irregular defect in the area of the frontal sinus. The defect was exposed through a coronal incision and all of the scar was removed. A block of iliac bone was then removed and carved to fit into the defect, reconstructing the entire forehead and glabellar area. Figure 2 shows the same patient one year after the reconstruction. The paresthesia has been completely relieved.

CASE 2.—T. C., a 6-year-old boy, was struck by a steam roller, which caused a crushing injury to the left frontal and temporal regions and the middle third of the face (Fig. 2*A*). Pneumatocele developed after the original injury, and the reconstruction work had to be delayed. A left dacryocystorrhinostomy was first performed, followed by reconstruction of the floor of the right orbit and middle third of the face with autogenous cartilage (Fig. 2*B*). Moulages made in succeeding years indicate the continuous growth of the grafts over a period of four years (Fig. 2*C*).*

CASE 3.—The case of A. R., a 33-year-old man, illustrates correction of multiple defects with autogenous cartilage grafts. A. R. had sustained a crushing defect of the left side of the forehead and the left temporal and orbital regions, with depression of the malar

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*Other cases in which autogenous bone and cartilage were used, followed for six to eight years, have revealed evidence of continuous growth of the graf [illegible] as long [illegible] he curve motion of growth was in the

Obstetric and Gynecologic Surgery

Ovarian Cyst Following Supracervical Hysterectomy

Report of a Case

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THE diagnosis of ovarian cyst following supravaginal or supracervical hysterectomy is more difficult than when the uterus is present for orientation during abdominovaginal bimanual palpation. Usually, a cystic mass on either side of the fundus uteri is considered an ovarian cyst. When the uterus is palpable it is usually not difficult to differentiate the left ovary from the right. In the presence of a large cystic mass, the uterus may be displaced to the opposite side. If there is a large cystic ovarian mass in the cul de sac, it may be difficult to detect which ovary is involved. A history of a previous oophorectomy is not to be overlooked as a key to the remaining ovary.

In dealing with the question of ovarian cyst in a patient who has undergone hysterectomy, the diagnosis may be difficult. A cystic mass in the cul de sac or in a supravaginal position is most likely to be ovarian in origin. The absence of the uterus, the most important landmark in the diagnosis of adenexial masses, causes one to make a presumptive diagnosis of ovarian cyst. Cystic masses may be aspirated safely by the transvaginal route as described by Steadman,[1] provided the cystic mass is fixed to the vagina by adhesions or is wedged so that it cannot be dislodged by bimanual palpation. One must be sure that the bowel and bladder are not punctured. Colpopuncture complications resulting from puncture of the intestine with a small gauge needle are rare. The wound usually seals at once, and inflammatory reaction is mild. The vagina must be sterilized with phisoderm or phisohex and water, followed by a solution of tincture of zephiran or tincture of merthiolate.

The material obtained may be exceedingly helpful in making an accurate preoperative diagnosis. Is the material old blood, as with hemorrhagic cyst or endometriosis; pus, as with suppurative oophoritis; mucoid material, as with pseudomucinous cystadenoma or pseudomucinous cystadenocarcinoma; serous fluid, or other than any of these? Is the mass benign or malignant? If benign, treatment may be delayed. If malignant, radical and vigorous treatment must be instituted at once.

Never aspirate an ovarian cyst transabdominally and only transvaginally as in cases described above because of possible contamination of peritoneal cavity with malignant cells.

Hysterosalpingographic study is often a valuable aid in the diagnosis of ovarian cyst but is denied in the cases under discussion. If an ovarian cyst is present and the uterus lacking, it is possible to take roentgenograms in the following circumstances:

1. The ovary or cyst wall contains deposits of calcium.

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stead, within a year there was definite roentgen evidence of osteogenesis extending from the edges of the skull defect to the rib grafts and between the grafts themselves. The rib grafts were removed first from the left side of the chest and then from the right. On subsequent removal of the third and fourth grafts, the resected rib had regenerated so that it was difficult to tell it from its normal neighbor. Clinically, at the time of writing, the large defect is reconstructed with solid bone. It is not sensitive, nor is there any evidence of fluid or edema. The child (Fig. 6*B*) has not worn any protective dressing since one month after the last bone graft was inserted. He speaks and plays normally with his brothers and sisters.

SUMMARY

The authors present their experience with a large series of cases in which autogenous bone and cartilage grafts were employed in the treatment of extensive defects of the scalp and skull. They are impressed with the lasting qualities of such material in contrast to those of homologous grafts. Five illustrative cases are reported.

RESUMEN

Los autores presentán su experiencia con una gran serie de casos en los cuales se emplearon injertos autógenos de hueso y cartílago en el tratamiento de extensos defectos del cráneo. Ellos estan impresionados con las cualidades duraderas de ese material en contraste con las de los injertos homólogos. Se reportan cinco casos ilustrativos.

ZUSAMMENFASSUNG

Die Verfasser berichten über ihre Erfahrungen mit körpereigenen Knochen- und Knorpeltransplantaten in der Behandlung einer langen Reihe von Fällen mit umfangreichen Defekten der Kopfhaut und des knöchernen Schädels. Sie sind von den dauerhaften guten Eigenschaften dieses Materials im Gegensatz zu denen homologer Transplantate beeindruckt. Sie berichten über fünf erläuternde Krankheitsfälle.

RÉSUMÉ

Les auteurs présentent le résultat de leur expérience en s'appuyant sur une grande série de cas dans lesquels ils ont utilisé des greffes d'os et de cartilage autogènes pour le traitement de lésions étendues du cuir chevelu et du crâne. Ils ont été impressionnés par les qualités durables d'un matériel comparé aux greffes homologues. Cinq cas typiques sont rapportés.

RIASSUNTO

Gli autori comunicano la loro esperienza zu trapianti autogeni di osso e di cartilagine, che essi hanno utilizzato in un gran numero di casi per riparare vaste perdite di sostanza del cranio e del cuoio capelluto. La loro impressione è che questi materiali abbiano qualità superiori, a quelli omologhi.

Riferiscono 5 casi dimostrativi.

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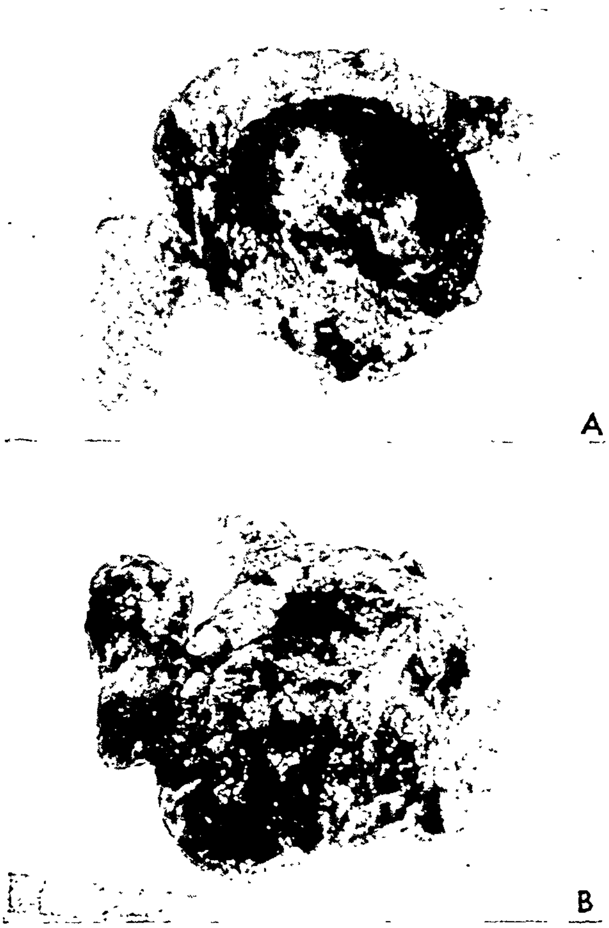

Fig. 2.—*A*, gross specimen in case of chronic oophoritis (ovarian abscess). Fallopian tube (chronic salpingitis) appears to be present. *B*, opposite view of *A*, showing defect in wall of cyst.

means of a 19-gauge needle and syringe. The patient expressed a feeling of great relief. Ten days later, 10 cc. of fluid was aspirated. The temperature was normal, and the symptoms had subsided. On May 4, 150 cc. of dark brown-to-black material was aspirated and studied for tumor cells. No abnormal cells were observed in the specimen sent to the laboratory. It consisted mostly of blood cells, suggesting endometriosis (chocolate cyst). The patient's temperature was normal. At this visit, 100 cc. of ethiodol was injected into the cyst cavity and anterio-posterior and lateral roentgenograms were taken (Fig. 1 *A*). Then 100 cc. of 20 per cent skiodan was injected into the urinary bladder via catheter. The same views were taken to show the relation of the cyst to the urinary bladder (Fig. 1, *B* and *C*). At the patient's next visit, on May 7, 100 cc. of the cyst material was removed. The temperature was 98.8 F. and the hemoglobin level 81.6 per cent. The patient complained of pain in the back, frequency of urination and dysuria. A catheterized specimen of urine proved to be loaded with pus. Treatment consisted of the administration of AZO-gantrisin and penicillin. When the patient returned, four days later, 100 cc. of fluid was again removed, and at least 150 cc. additional fluid drained out through the vagina. A temperature of 99.4 F. and pain in the lower part of the abdomen were present on May 14. The pelvic mass was much smaller and was firm and pronouncedly tender. The diagnosis was oophoritis, probably resulting from transvaginal contamination. Phisoderm and water, plus tincture of merthiolate, were used in a vaginal preparation for colpopuncture. The patient responded well to injections of streptomycin and penicillin every twenty-four hours.

It was thought wise to postpone surgical intervention until the infection had been overcome. When the symptoms of acute infection had been absent for several weeks, the patient was eager to have the operation performed. The mass was smaller by two-thirds its original size, probably because of the repeated aspirations of its contents. Slight tenderness was still present.

On June 6 the patient was admitted to the Georgia Baptist Hospital, with the diagnosis of left ovarian cyst. The chief complaint was pain and pressure in the lower part of the abdomen. The patient was in no visible distress. A routine physical examination revealed her to be essentially normal except for a slightly tender mass firmly attached to the vaginal vault, detectable by bimanual (abdomino-vaginal) palpation. In contrast to the cystic consistency of the larger mass prior to aspiration and inflammatory reaction, the mass was firm. Its size was estimated at about 8 by 9 cm. Laboratory reports revealed no abnormality except an elevated sedimentation rate of 103 mm. per hour. Since the patient showed no other signs of infection, however, intervention was not canceled.

The operation was performed on June 7, with the patient under general anesthesia (sodium pentothal, nitrous oxide, cyclopropane, anectine and oxygen). After the usual preparation and draping of the patient in a supine position, with a Foley catheter in the bladder, a midline incision was made extending from the symphysis to 2 cm. above the umbilicus on the right. The abdomen was entered in layers, and bleeders were tied as

RÉSUMÉ

Une techniques de résection de l'excédent de peau et de tissus sous-cutanés des cuisse est décrite, s'ajoutant à celles en usage pour l'abdomen, les seins, la face et le cou, appliquées aux malades ayant subi une perte de poids importante. Son expérience quoique limitée de cette technique —conçue afin de résoudre un problème spécifique—a permis à l'auteur d'obtenir des résultats satisfaisants. Il est convaincu de pouvoir à l'avenir procéder sans danger à des excisions plus étendues, obtenant ainsi une cicatrice plus souple et augmentant l'élévation des tissus relâchés et ptosés. Le confort du malade ne devrait pas être négligé, et le port seyant de ses vêtements n'est pas un facteur mineur; cependant la confiance en soi retrouvée et l'état psychologique post-opératoire ont plus d'importance que ces autres facteurs.

RIASSUNTO

Viene descritta una tecnica per ridurre l'eccesso di cute alle anche; questa tecnica deve essere affiancata a quella in uso per ridurre la sovrabbondanza di cute e sottocutaneo dell'addome, delle mammelle, del viso e del collo, allo scopo di migliorare l'aspetto delle persone che abbiano avuto una forte perdita di peso.

L'esperienza dell'autore, benchè limitata, è stata soddisfacente; egli è persuaso che in avvenire si potranno escidere con sicurezza tratti molto più ampi di cute e di sottocutaneo così da ottenere una migliore sistemazione dei tessuti ptosici e rilassati.

RESUMEN

Se describe una técnica, para reducción de la piel y tejido celular subcutáneo redundantes en los muslos, para agregarse al armamentarium quirúrgico para la reducción de la piel y tejido celular subcutáneo redundantes en el abdomen, el pecho la cara y el cuello para mejorar la comodidad y la apariencia de pacientes que han perdido excesivo peso. La limitada experiencia del autor con esta operación que ha sido creada para resolver un problema específico ha sido satisfactoria. El está convencido de que en el futuro él puede extirpar sin riesgo piel y tejido celular subcutáneo mas generosamente, obteniendo así un cierre más ajustado y mejorando la elevación de los tejidos relajados y caídos. La comodidad del paciente no debe menospreciarse, y la conveniencia en el ajuste de la ropa no es de menor importancia; sin embargo, el factor más importante es el mejoramiento de la condición psicológica del paciente y su confianza en sí mismo después de la operación.

ZUSAMMENFASSUNG

Dem Chirurgen, der zur Besserung des Wohlbefindens und der äusseren Erscheinung von Kranken mit erheblichem Gewichtsverlust durch Entfernung überflüssiger Haut und überflüssigen Unterhautzellgewebes am Bauch, an den Brüsten, am Gesicht und am Hals beiträgt, wird durch die Beschreibung einer Technik zur Resektion überflüssigen Haut- und Unterhautgewebes am Oberschenkel eine weitere Möglichkeit auf diesem Felde geboten. Die begrenzten Erfahrungen des Verfassers mit dieser Operation, die mit dem Ziel der Lösung eines bestimmten Problems ausgearbeitet worden ist, sind zufriedenstellend. Er ist überzeugt, dass er in Zukunft ohne Gefahr umfangreichere Resektionen der Haut und des Unterhautzellgewebes ausführen und somit einen strafferen Verschluss und eine bessere Hebung des ptotischen und erschlafften Gewebes erzielen kann. Das Wohlbefinden des Kranken und die ihm gebotene Möglichkeit, in seine Kleider zu passen, sind tumor mass, extirpated and sent to the pathologist.

RÉSUMÉ ET CONCLUSIONS

L'auteur présente un cas de post-hystérectomie (kyste ovarien). Le matériel d'analyse pour le diagnostic pré-opératoire est obtenu par aspiration transvaginale. La cavité est remplie au moyen d'un produit de contraste (thiodol) et l'on pratique des roentgenogrammes. Des roentgenogrammes de la vessie remplie de "kiodan" montrent les rapports entre le kyste et la vessie. Ces examens ont une certaine valeur pratique, mais ils semblent plutôt présenter un intérêt académique.

L'auteur discute les complications possibles de l'aspiration trans-vaginale, et énumère les avantages de la colpotomie et de l'étude radiologique de la cavité kystique. La masse kystique pré-inflammatoire est comparée à la masse inflammatoire kystique, elle est extirpée et envoyée au pathologiste.

ZUSAMMENFASSUNG UND SCHLUSSFOLGERUNGEN

Es wird über einen Fall von nach Gebärmutterresektion auftretender Eierstockszyste berichtet. Durch transvaginale Ansaugung wird Material zur Untersuchung und zur Erlangung einer präoperativen Diagnose gewonnen. Die entleerte Höhle wird mit einem Kontrastmittel (Ethiodol) gefüllt, und Röntgenaufnahmen werden angefertigt. Die Harnblase wird mit Skiodan gefüllt und ebenfalls einer Röntgenuntersuchung unterzogen, um die Beziehungen der Zyste zur Harnblase zu bestimmen. Dies mag vielleicht von mehr akademischem Interesse sein, hat aber auch einen gewissen praktischen Wert.

Die möglichen Komplikationen der transvaginalen Punktion werden erörtert, und die Vorzüge der präoperativen Kolpotomie und der Röntgenuntersuchung der Zystenhöhle werden hervorgehoben. Die präinflammatorische zystische Masse wird mit der entzündlichen Geschwulst verglichen, entfernt und dem Pathologen zur Untersuchung überwiesen.

SUMARIO E CONCLUSOES

O A. apresenta um caso de cisto do ovario póshisterectomia. O material para estudo e diagnóstico pre-operatório foi obtido por aspiração transvaginal. O enchimento da cavidade com contraste (Ethiodol) permitio o exame radiografico. A bexiga foi distendida com iodon permitindo o exame radiografico demonstrar a relação do cisto com esse orgão do sistema urinário. Tal exame tem algum valor pratico porem maior interesse academico.

A possivel complicação devida a aspiração transvaginal é apresentada pelo A. que tambem discute e salienta as vantagens da colpotomia e exame radiografico da cavidade cistica. A massa tumoral preinflamatoria é comparada com a tumoração inflamatoria e, depois de extirpadas são submetida a exame pelo patologista.

RESUMEN Y CONCLUSIONES

Se presenta un caso de quiste del ovario posthisterectomía. Material para estudio y para diagnóstico preoperatorio se obtienen por aspiración transvaginal. La cavidad vacía se llena con un medio de contraste. La vejiga se llena con Iodan y se toman radiografías para demostrar la relación del quiste con la vejiga urinaria. Esto tiene algún valor prático pero es más de interés académico.

Se discuten las posibles complicaciones de la aspiración transvaginal y las ventajas de la colpotomía preoperatoria y estudio radiológico de la cavidad del quiste.

La masa quistica pre inflamatoria se

Grindlay and his associates,[5] as early as 1951, reported on the properties and tissue response of formalinized polyvinyl alcohol sponge (Ivalon). Since then, Mortensen and Grindlay[6] and Shumway and his associates[7] have reported a favorable experience in the substitution for major arteries, both experimentally and clinically, of tubes made of molded compressed Ivalon sponge. Gross and histologic observations have revealed a fate for these materials similar to that of homografts.[6]

Using a method similar to that of Shumway, Gliedman and Lewis,[7] we have constructed Ivalon arterial prostheses, and on the basis of our experience with these in dogs and patients, consider them satisfactory arterial substitutes. In fact, we prefer them to homografts for replacement of arteries the size of the common femoral or larger.

Method of Construction of Ivalon Tubes.—The remarkable physiochemical properties of Ivalon must be known for the proper construction of arterial grafts. The material is supplied in block sponge form, which is soft and pliable and is kept so by a hygroscopic agent. Formaldehyde is also present to inhibit bacterial growth. This raw product must be washed thoroughly under running water for twenty-four hours, or a severe foreign body reaction will be evoked by the retained formaldehyde (Fig. 1).

After washing, the large block must dry thoroughly to allow cutting. Five days should be allowed for complete drying. By means of a large band saw, the block is cut into sheets varying from 1.5 to 3.5 mm. in thickness.

To form the graft, the sheets are soaked in cool tap water. They become flexible, elastic, spongy and hydrophilic.

Our compression molds are of stainless steel with brass cores (Fig. 2*A*). They are precision-machined to provide uniform luminal diameter and wall thickness.

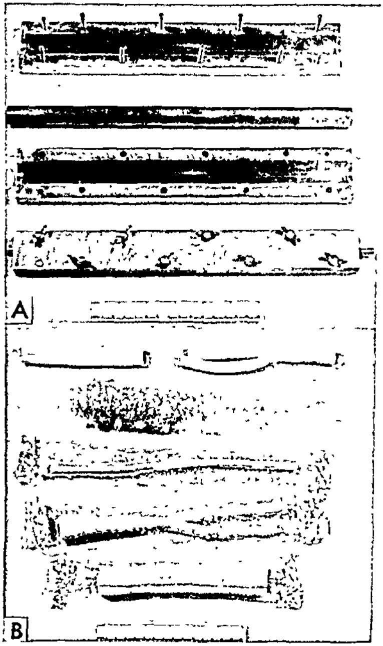

Fig. 2—*A*, stainless steel molds with brass core. *B*, method of storing finished molded grafts in sterile cellophane bags.

While moderately stretched, the wet sheets are rolled upon the brass core approximately three times, providing a wet, uncompressed thickness of 9 to 12 mm. The wet, spongy roll is compressed in the mold and autoclaved for twenty minutes. It is usually necessary to retighten the wing nuts once during this sterilization.

After compression to a final thickness of 1.5 to 2 mm., a sixfold increase in density is achieved. The mold is cooled; the graft is removed and trimmed and is ready for use.

In our opinion the final density is of the utmost importance in determining the

Extraperitoneal Cesarean Section

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"WITH the use of antibiotics, the simpler transperitoneal cesarean section will replace the extraperitoneal operation."

These words are a verbatim quotation of a prophecy published in 1951 by Greenhill,[1] a man whose opinions, via the Year Book, probably reach more practitioners who deliver babies than do the opinions of any other authority in the field.

This prophecy may come true, as most of Greenhill's gynecologic predictions do. In this year of 1957, however, the prophecy has not yet been completely fulfilled. Even though more and better anti-infectious agents are available, the increasing resistance of common pathogenic organisms to currently available antibiotics suggests that the anti-infectious drugs may not forever remain the panaceas they are now considered.

Cartwright[2] recently reported the results of a questionnaire-survey comprising 476 obstetricians on the Pacific coast. The fact that a reply was received from over 90 per cent of these specialists indicates a lively interest in the question, "Do you use an extraperitoneal cesarean technic?" Significantly, almost half use the technic in selected cases. Of additional significance is the fact that almost half of those who do not use the procedure have never performed any type of extraperitoneal section.

Many obstetric authorities are convinced that the antibiotics have solved the problem of maternal mortality and serious morbidity following transperitoneal delivery in cases of infection. I remain unconvinced, since convincing proof could come only from a statistically significant number of operations of both types, performed by the same surgeon on frankly infected, not just potentially infected persons, with antibiotics used in both types of operation and, most importantly, with an extraperitoneal technic as simple and safe as possible. The few significant comparative studies that have been reported have involved an extraperitoneal technic which, although it has become relatively simple to the practiced hand of the expert who especially interested himself in it, remains technically difficult and hazardous for the average gynecologic surgeon.

Aside from the prevention of infectious peritonitis, a conspicuous feature in any comparison of the transperitoneal and extraperitoneal technics, is the freedom from postoperative discomfort and distention when the peritoneal cavity is unopened. The relatively smooth postoperative course following extraperitoneal section is striking and deserves much more emphasis in the literature than it receives. Such a postoperative course is entirely logical and to be expected when the peritoneal cavity is spared contamination by air, blood, amniotic fluid, meconium and bacteria.

In my own opinion, the principle of extraperitoneal approach has sufficient merit to justify a continued search for a simpler and safer technic than those currently in use.

The relatively safe modern procedures for regional anesthesia confer an opportu-

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Submitted for publication Oct. 3, 1956.

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retraction subsequently, entails a much lessened risk of trauma to the vital areas of the urinary tract and produces adequate exposure for delivery and repair. In this type of supravesical approach the difficulty of establishing a cleavage line at the vesical fundus will vary directly with the intimacy of attachment by a variable number of thin fascial laminations. The difficulties of dissection here, however, will also vary indirectly with the degree of accuracy with which the margin of the vesical dome can be constantly identified.

I have observed that the margin of the bladder can be constantly identified by preoperative insertion into the urethra of a No. 16 French catheter to a depth of about three-quarters of its length. The catheter will lie in a coil in the bladder and serve as an indicator of its entire peripheral margin.

After the abdominal layers have been incised longitudinally down to the transversalis fascia, the margin of the vesical dome is easily identified by palpation of the indwelling catheter. By blunt dissection of the anchoring fascial laminations the dome may be freed from the peritoneum with increasing facility as one's experience increases. After one is familiar with this area, the dome dissection may be initiated by delicate fascial division with the scalpel tip; then the gauze-covered index finger of one hand stabilizes the peritoneum in an upward direction while the vesical dome is freed by blunt dissection downward with the gauze-covered finger of the other hand. The dissection is begun in the midline, and, after the dome has been freed in the plane of the posterior muscularis, posterior dissection from above downward proceeds easily. After the bladder has been completely freed posteriorly it is retracted caudad with a curved bladder retractor, and sufficient exposure is thereby attained to open the lower cervical area transversely below the peritoneal reflection and to proceed thereafter as in the conventional transperitoneal operation.

I prefer to open the uterus by finger separation of the muscle fibers from the midline laterally. I have found it helpful to place a traction suture at each lateral angle of the uterine incision and another in the midline of the lower lip of the incision before extracting the fetal head with forceps. The lower lip may drop deep into the pelvis after the uterus is emptied and be difficult to retrieve. The emptied uterus is closed with two layers of continuous catgut. The bladder is gently laid back over the lower segment, in its normal position, without anchoring sutures. The retrovesical space may be drained, although I have not used drainage in most cases because frank preoperative infection has not been present. The fascia and the superficial abdominal layers are closed in the usual manner.

The attractive features of this technic are (1) the procedure, at no stage, involves a distended bladder, which is more easily ruptured or traumatized than a collapsed one; (2) the hitherto difficult dissection of the vesicoperitoneal juncture is facilitated by the placement of an indwelling catheter, coiled in such a manner as to delineate the bladder margins sharply, and (3) the risk of trauma is confined to the vesical fundus, which heals with relative ease.

The major features of the technic are delineated in Figures 1 and 2.

The criteria for selection of 31 cases in which I have used this technic follow no very logical pattern, for the simple reason that I was investigating not only the technic itself but my ability to carry it out in a variety of circumstances. In most of the 31 cases a reasonably long labor (twenty-four hours or more) had existed before operation, and ruptured membranes had been present for a considerable time. In

Plastic Surgical Management of Common Lesions of the Face and Oral Cavity

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IN dealing with malignant lesions of the head and neck one encounters chiefly the basal cell and squamous types of epithelioma. Other conditions, such as malignant melanoma and the ever-present hemangioma, also must be considered.

From the point of view of the plastic surgeon or any other surgeon who undertakes the treatment of such lesions, the objectives are clearly defined: (1) complete removal of all diseased tissue and (2) adequate reconstruction of the resulting defect, so that the patient is socially acceptable and can carry on his gainful occupation. Surgeons are naturally interested in accomplishing these ends by surgical methods rather than by other forms of therapy, such as electrodessication, cautery destruction or irradiation.

If all diseased tissue has been successfully removed, final reconstruction can be carried out immediately rather than postponed for some future date. One must be absolutely certain, however, that all of the malignant growth has been removed. Several steps are useful in this direction: 1. Outlining the area of the tumor and of the proposed excision with a skin dye before the injection of a local anesthetic into the surrounding tissues results in distortion of the features, or before partial incisions are made in the area. 2. Conducting an immediate check of questionable tissue by frozen section. This can give a clear idea of the progress of the tumor to the periphery and also to the depth of the excision. 3. Checking the results of routine pathologic examination against the frozen sections.

Once the diseased tissue has been removed, the surgeon's problem revolves around the satisfactory repair of the resulting defect to produce the second major aim aforementioned, namely, a reconstruction so satisfactory that the patient is socially acceptable and can carry on his work, so that he does not become a burden on his relatives or on some charitably supported organization. A number of procedures are commonly employed by the plastic surgeon to convert unsightly defects into satisfactory end results. It is the purpose of this paper to review briefly some of these methods and to demonstrate their application to various regions of the head and neck. They can be listed as follows: (1) direct closure; (2) extensive undermining with direct closure; (3) the use of local flaps; (4) the use of split thickness skin grafts; (5) the use of full thickness skin grafts; (6) the use of distant flaps; (7) the use of composite grafts, and (8) metallic reconstruction of the mandible after radical resection of the neck and jaw.

Let us first consider conditions involving the nose. Direct closure on the dorsum, where the skin is relatively limited, is rarely possible, and it is usually neces-

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average postoperative stay in the hospital was seven and one-half days, the longest being fifteen days (for a patient with a postpartum psychosis). The largest child delivered weighed 9 pounds (4,082 Gm.); the smallest was premature and weighed 4¾ pounds (2,154.5 Gm.). In the latter instance there had been placenta praevia and no labor. My only excuse for the extraperitoneal procedure in this case is that it was experimental, and I learned that I could get quite adequate exposure and that hemostasis was not difficult. The child, plus all other babies in this series, survived.

Each patient in this series was examined six weeks post partum. No postoperative sequelae in any of the cases has come to my attention, either at that time or since the examination.

On 4 of these patients I have performed subsequent transperitoneal sections electively, with no significant abnormalities. A "repeat" extraperitoneal procedure of this type would be difficult but, if it were feasible, it would be highly desirable. As has been mentioned, one of the striking features in these cases was the relatively comfortable postoperative course. I am convinced that the patients were less disturbed by this procedure than by a transperitoneal operation, with or without antibiotics.

Referring again to the original question as to whether the frankly infected patient who requires abdominal delivery can be handled just as safely by a transperitoneal operation plus antibiotics as by an extraperitoneal technic, I must admit that my limited experience with this uncontrolled series reveals nothing conclusive. I get a suggestion, however, from a review of the records of the last 31 transperitoneal low cervical sections which I performed electively on patients who had no labor and who were delivered under spinal anesthesia with prophylactic antibiotic therapy. I find that each of 5 patients in the transperitoneal group had a technically febrile puerperium, the criterion being a temperature of 100.4 F. on any two postoperative days. Of the patients in the extraperitoneal series, thirty of whom had preliminary labor, in 7 cases exceeding forty-eight hours, only 1 patient was technically febrile. Moreover, on a more rigid criterion of elevation of the postoperative temperature to 100.4 F. on any single observation, I note that in the transperitoneal group 12 patients had such a single rise. This contrast, I believe, is significant and supports my contention that the extraperitoneal technic, as herein described, lessens the consequent physiologic disturbance.

Despite these advantages, it would seem clear that this technic should not be used routinely for all primary sections. Direct inspection of the intra-abdominal organs and determination of the indication for surgical treatment thereof is frequently desirable but precluded by the extraperitoneal approach. Then, too, it would be unwise to use this technic in any case in which operative speed was necessary in the interests of either mother or baby.

It is important to use an anesthetic that does not narcotize the fetus, because, with any extraperitoneal technic, considerable time elapses from the beginning of the operation until delivery of the child.

On the other hand, some extraperitoneal technic that eliminates peritoneal contamination and minimizes surgical shock should be included in the resources of every obstetric specialist, who will find it advantageous in certain selected cases in which there is frank infection or the patients are poor surgical risks. In spite of marked improvement in general obstetric care, the specialist is certain to be called into consultation on the occasional poorly managed case of infected disproportion. In such cases the antibiotic drugs are in-

or indeed the entire ear, can be removed without difficulty. Prosthetic appliances made of latex and glued to the scalp in the mastoid region offer satisfactory camouflages. When smaller lesions are present, certain portions of the ear can be removed through elliptic incisions without producing any particular distortion of the ear. The use of full thickness skin grafts on the anterior aspect of the ear for lesions involving the underlying cartilage, when excision of all but the posterior skin of the ear is required, is a common and satisfactory procedure.

In dealing with the scalp, it is usually possible to close large defects with local flaps. This is particularly important in treating a woman or a man who still has a full head of hair. Hair-bearing scalp can be moved to cover large defects. The secondary defect created can be covered with split thickness skin grafts and the hair trained over the bald area produced by the skin grafts. The area of scalp thus moved can be considerable, and the coverage by hair can be quite satisfactory. Children have a tendency toward hemangiomas, some of which grow very rapidly and require extensive excision, even at an early age. The resulting defect can usually be closed without difficulty by proper undermining of the tissues adjacent to the defect. It is desirable in certain cases to make absolutely certain that undue tension is not placed upon the eyebrow, pulling it up out of position, or that the normal hairline is not distorted by being pulled over the forehead. When the patient is completely bald, the use of full thickness skin grafts on the scalp is entirely satisfactory.

In the cheek the tissues are quite lax, particularly in the elderly and aged, and, as age advances, the opportunity for use of large cheek flaps increases. Some of these cheek flaps can involve a major portion of the cheek, others only a partial advancement. The use of the skin closest to the area of excision is always, of course, the most desirable, and it is only in rare cases, in which extensive and multiple lesions involve large areas of the cheek, that the split thickness skin graft is used. When partial or complete resurfacing of a cheek is necessary, however, the split thickness skin graft serves a useful purpose.

Parotid tumors present a number of problems known to all surgeons. These hinge around (1) complete removal of the tumor and (2) preservation of the facial nerve. Identification of the facial nerve by using the posterior facial vein as a landmark, as pointed out by Dr. Louis Byars, makes for adequate removal of the tumor without injury to the nerve in most cases. The size of the tumor can, on occasion, be considerable, but the same basic technic can produce a satisfactory result.

Lesions of the upper lip are relatively uncommon; they do appear at the base of the ala, in the fold between the lip and the cheek. These lend themselves to adequate excision with favorable reconstruction of the upper lip, and no major distortion is involved. The ordinary isolated lesion of the lower lip is well handled by a V type of excision. Apparently, if one follows the normal cutaneous folds, a more pleasing result can be obtained than when the excision is made in a completely vertical direction. For multiple lesions of the lip, or when the vermilion border of the lower lip is extensively involved by leukoplakia, the combination of a single or double V type of excision, plus complete excision of the vermilion border with advancement of the mucous membrane of the lower lip to reconstruct it, results in a satisfactory postoperative condition.

Operation on the tongue for areas of leukoplakia or early squamous cell carcinomas is perhaps acceptable. Operation for extensive lesions of the

zione e senza complicanze. I risultati così ottenuti sono stati paragonati con quelli ottenuti dallo stesso chirurgo col metodo classico. Sembra augurabile una più ampia applicazione di questo metodo.

RESUMEN

Se describe una técnica de cesárea extraperitoneal. En una serie de 31 casos en los cuales el parto se efectuó por esta técnica, que ultiliza una vía puramente supravesical a una vejiga colapsada, los márgenes de la cual se identifican por medio de un catéter intravesical. El procedimiento es relativamente simple y libre de complicaciones. Los resultados obtenidos en esta pequeña serie se comparan con base, solo en impresión clínica, a los resultados de cesáreas transperitoneales efectuadas por el mismo cirujano.

La técnica se presenta a la profesión quirúrgica para mas extensas pruebas y evaluación.

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> . . . I proposed to go immediately . . . to spend some time in the Hospitals . . . I have now studied the Theory of medicine & have likewise been taught every thing upon the Practice which can be learned in a College. I have also seen some real Practice & have even practiced a little myself. But all this is not enough. I should be thoroughly acquainted with the real Practice & this is a thing very different from what can be learned in a College; thus for instance we are taught by our Professors that if a sick person breathes with great difficulty, one thing must be done; if his respiration is yet more laborious, another. But How shall we judge of the nice degrees of laborious breathing unless from a dayly & familiar acquaintance with, & study of, the appearances and looks of Patients &c. Most young Physicians neglect this essential point of their art in their education & very often acquire it when they come to Practice at the expense of their patients' safety.
>
> —*Black*

roditic hypospadias (Fig. 2A). The rudimentary penis, which was smaller than the normal clitoris, remained unaffected. The large breasts retrogressed well. The lips remained hairless, and the chin was almost bare except for a few hairs on either side. There was no hair on the chest and legs.

A moustache was constructed from the hairy skin of the scalp (Fig. 5). Phalloplasty was then performed.

Operative Technic: Reconstruction of the penis is carried out in many stages and usually requires about six to nine months.

First Stage. A large abdominal tube pedicle was constructed from the skin, subcutaneous tissue and fat (Fig. 2*A*). Two parallel curved incisions (for elevating the flap) were so planned that later, when the upper end of the pedicle should be severed and transplanted to the hand, it would not twist. Thick interrupted chromic catgut sutures were used to unite the fatty layer of the superficial fascia of the abdomen in converting the flap into a tube (*a*, Fig. 4). The tissue reaction of the catgut finally leads to the production of a strong ridge of fibrous tissue in the pedicle which makes it somewhat stiff (*b*, Fig. 4).

Second Stage. The lower end was severed and transplanted to the hand on the same side (Fig. 2). I like to avoid direct transplantation of the abdominal pedicle to the subsymphysial region, as this produces an undesirable twist of the pedicle.

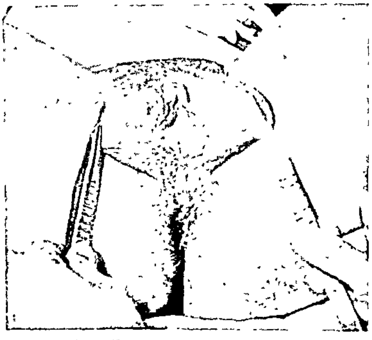

Fig. 1.—So-called vagina and clitoris (rudimentary penis). Appearance after a few months of hormonal therapy, with some development of testes and scrotal sacs. Abdominal pedicle is covered with many-tailed bandage.

Before the connection of the tube pedicle was severed at any point it was conditioned for several days. A fine rubber tube was applied to the end of the pedicle to be severed for about ten minutes every three hours, and the time interval being made progressively longer and more frequent until, on the day before disconnection, the rubber tube was left tied to the tube pedicle for about twelve hours. Absence of change in color and of lowered temperature at any part of the pedicle were considered safety signs that disconnection will be safe.

Third Stage. The pedicle was disconnected from the abdomen. A triangular flap of skin was raised below the symphysis pubis, with its base towards the vagina.

The rudimentary clitoris-like penis was dissected, to be used as a central peg, and the tube pedicle was grafted over it and sutured to the subsymphysial region by interrupted stitches (Fig. 2*B*). This little penile stump under sexual impetus produces the elevation of the newly constructed phallus with its bony baculum (Fig. 2*C*).

Fourth Stage. A massive bone graft about 10-11 cm. long with a larger periosteal segment was obtained from the tibia (Fig. 5). On the upper part of the tibia, two 14 cm. parallel incisions were made 3 cm. apart. Both ends of the incisions were joined. The periosteum was elevated a little more than 0.5 cm. along the longitudinal incisions and at the lower end. More than 3 cm. of periosteum was elevated at the upper end. Fine drill holes were made 1 cm. apart to map out a bone graft about 10 cm. long and 1.5 cm. broad. With the help of osteotome and hammer this bone graft was elevated, together with the large segment of periosteum, which is kept attached to it. The ends of the bone graft were rounded off and a fine hole drilled at the long periosteal end.

Two short longitudinal incisions were made in the pedicle, at its proximal and its distal end. These incisions were connected by making a subcutaneous tunnel in the pedicle to receive the bone graft. The proximal incision also exposed the rudimentary clitoris-like penis peg.

A stout chromic catgut suture was passed through the hole in the bone at the long periosteal end of the bone graft and through the penile peg and was then tied. A few stitches sutured the flap of periosteum to the rudimentary penis. The bone graft was thus firmly anchored to the penile peg.

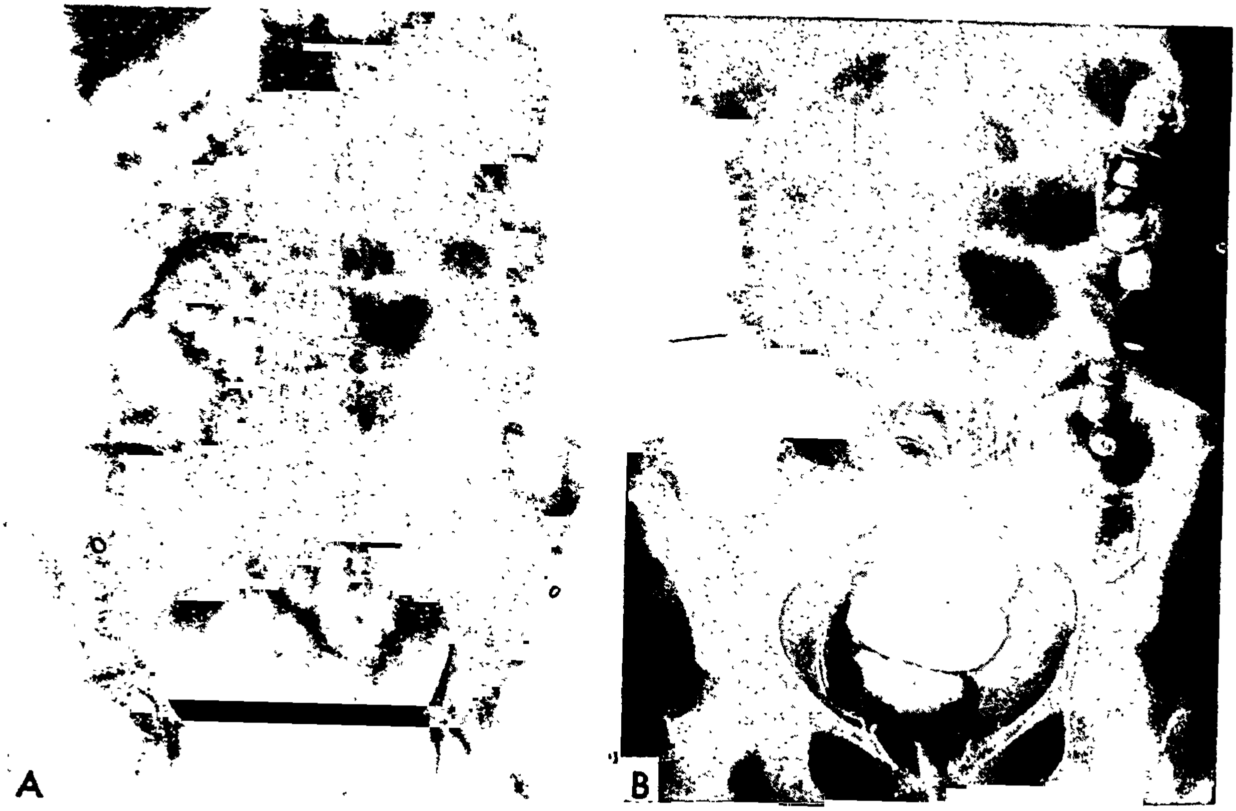

Fig. 1.—*A*, examination of the colon after a barium enema shows stoppage of barium at the splenic flexure. Double contrast air studies were done and air was forced through the remainder of the colon, moderately expanding the cecum (*B*). With this evidence a preoperative diagnosis of intestinal obstruction at the splenic flexure was made and operation was performed.

ing 5 pounds and 1 ounce (2,268 Gm.) was delivered. After delivery the patient became distended and began to vomit. A soapsuds enema gave no results, and no gas was passed. Laboratory tests revealed an erythrocyte count of 3,840,000 per cubic millimeter of blood, with 78 per cent hemoglobin. The blood pressure was 120 systolic and 80 diastolic.

Surgical consultation was secured and roentgen study ordered. A flat plate of the abdomen was taken. The roentgenologist, R. Thompson, interpreted the flat plate as indicating paralleling and distention of the loops of small bowel. The stomach was moderately distended (Fig. 1).

Operation.—On exploration, under continuous pontocaine fructose spinal anesthesia, the abdomen was observed to be much distended, and an obvious carcinoma of the splenic flexure was present. The glands in the mesenteric leaf of the colon were large and firm. The colon proximal to the obstruction was large and filled with fluid feces. The appendix was large—almost the size of an index finger. It was considered that decompression could best be secured by a stab wound appendicostomy. A No. 22 French catheter was inserted through the tip of the appendix into the colon, and suction was immediately applied. A large quantity of fecal material was drained off and resection was then possible. Most of the transverse portion of the colon, the splenic flexure and the descending portion were resected and lateral anastomosis was performed by interrupted silk technic.

The convalescence after this operation was uneventful, but because of the metastasis to the large nodes and the invasion of the pancreas it was the impression that the patient would not be permanently cured.

Pathologic Report (Dr. Benjamin Kline*).—*Gross*: "The specimen consists of about 8 inches of the colon from region of splenic flexure (Fig. 2). About 2½ inches from one end and 4½ inches from the other there is a hard mass about 8 cm. long, involving the wall of the bowel and regional adipose and pancreatic tissues. On incision of the bowel, the lumen in the involved area is considerably with the functional value of the reconstructed penis. For a few years I kept thinking of providing an artificial os penis in these cases. When I finally did, the result was gratifying.

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*Director of Pathology, Woman's Hospital.

A bone graft from the tibia appears to be ideal for making the reconstructed organ stiff enough for good function.

For constructing the urethra in such cases a tubed pedicle of the desired length is made in the midline of the scrotum. In a young patient the urethra is constructed according to the technic of Bergman, and the resulting raw surface on the ventral or scrotal side of the phallus is covered by opening up the scrotal pedicle and suturing it over this raw area. In an elderly patient the simple method of Frumkin is adopted; one attaches the scrotal tubed pedicle along two parallel incisions on the ventral surface of the new penis. The new urethra lies between the abdominal and scrotal tubes that comprise the new phallus. In cases of reconstruction following amputation for carcinoma of the penis, however, construction of the urethra is often dispensed with by creating a permanent perineal urethrostomy.

Repair of Denuded Penis and Damaged Scrotum. — The penis is sometimes entirely stripped of its skin when accidentally caught in machinery. It loses its skin in cases of burn. It is also denuded as a result of excision of the elephantoid skin.

In cases of clean and fresh injury, after bone-dry hemostasis has been obtained, a split skin graft is applied with the penis in a state of moderate traction. Two stay sutures in the glans on either side are used for traction. The graft takes well, is movable and has good functional value.

When there is infection, as soon as it is controlled I prefer to embed the penis in a scrotal tunnel to give it a new covering. In such cases this procedure seems more satisfactory, because the possibility of not "taking" is minimized and the undesirable subepithelia fibrosis that commonly occurs in such cases is eliminated.

In cases of damage to the scrotal skin, if one-third is left intact, primary closure is often made possible by undermining at the base of the flap and borrowing somewhat from the thigh.

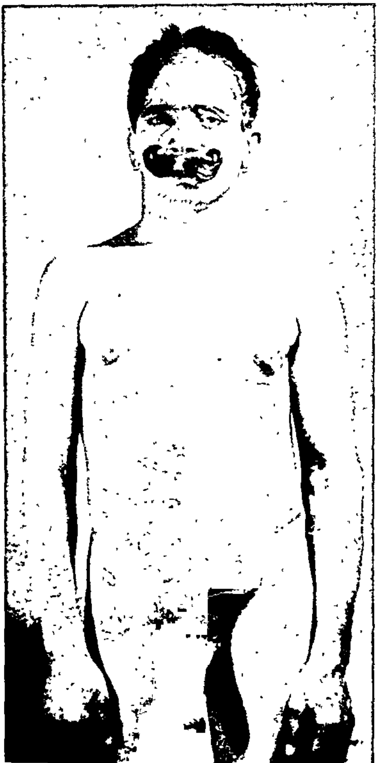

Fig. 5.—Reconstructed penis of desired size, hanging normally. There is a semblance of glans and sulcus behind it.

"*Final Diagnosis:* Anaplastic adenocarcinoma of the colon and splenic flexure, 8 cm. in its greatest diameter, with extension through all coats and regional adipose tissue. Regional metastases (several nodes and numerous nodules)."

On May 23, 1954, the patient was readmitted with a history of vomiting. Roentgen study showed evidence of some obstruction of the small bowel. A Levine tube and mineral oil brought about an improvement, and the patient was discharged. She was readmitted on June 28, with a history of vomiting and loss of weight. Roentgen study revealed obstruction of the small bowel. She was reoperated on, and it was noticed that the tumor had metastasized to the small intestines, causing obstruction in the terminal portion of the ileum. An ileotransverse enteroanastomosis was done for relief of the obstruction. The patient was discharged after convalescence but was readmitted on September 15, emaciated and vomiting. She died on October 8, almost ten months after resection of the carcinoma of the splenic flexure.

Comment on the Case.—The abnormal bowel habits of pregnant women are familiar. Many have pains in the abdomen, usually due to ordinary constipation or to prenatal contractions of the uterus. Many have increasing constipation, and as the fetal head settles into the inlet of the pelvis the constipation may become worse, so that the cathartics the patient relies on must be increased. One should be alert to the story that each month the constipation is increasing, with gas and nausea and vomiting. If this occurs one must suspect an organic lesion, and roentgen studies must be made regardless of the pregnancy.

It is interesting to note that Boehme and Hanson[4] observed 1,457 proved malignant tumors of the colon in the following locations: the cecum, 6.5 per cent; the ascending portion of the colon, 3.3 per cent; the hepatic flexure, 2.9 per cent; the transverse portion of the colon, 4.5 per cent; the splenic flexure, 2.4 per cent; the descending portion of the colon, 3.9 per cent; in the sigmoid, 12.4 per cent; in the rectum, 63.2 per cent, and in the anus, 0.6 per cent.

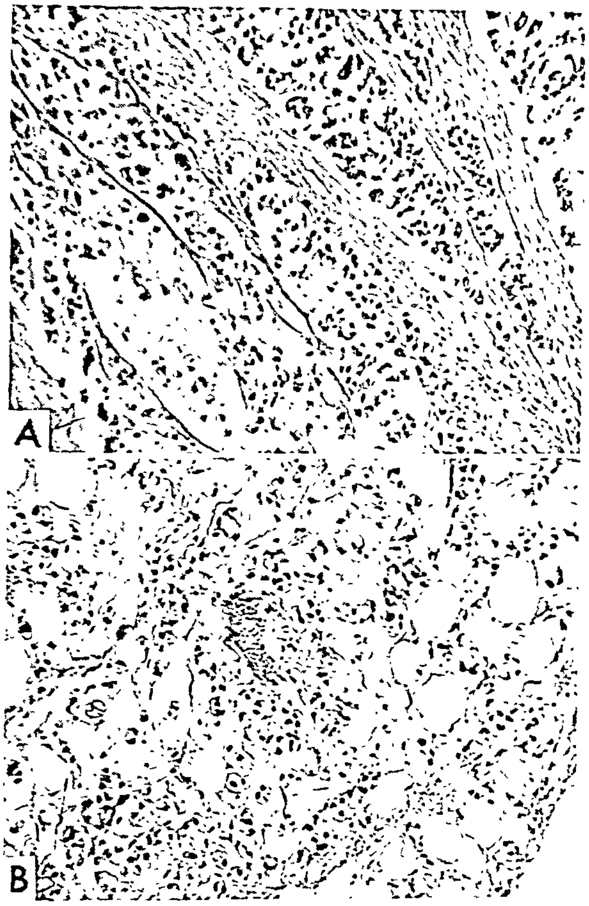

Fig. 4.—*A*, microscopic section showing various types of neoplastic units. *B*, direct invasion of lymph nodes in some areas (see text).

It is apparent, therefore, that carcinoma appears most often in the rectum, and this is the site at which carcinoma of the colon occurs most commonly during pregnancy.

In 73 cases of pregnancy reported in the world literature with mention of malignant disease, the lesion occurred above the rectum and sigmoid in only 1. Our case is the first to be reported in which the splenic flexure was the tumor site, and our patient was the second youngest woman in whom carcinoma during pregnancy occurred in the colon above the rectum.

during the operation when the nose has acquired the desired shape.

Both portions of the structure have several perforations to make them lighter and to allow their fixation in place.

Construction of Prosthetic Structure: A mold of the defective nose is taken and corrected. The positive mold of the defective nose and the negative mold of the corrected nose are set against each other and filled with wax. The result is a model of the needed structure, which should be lengthened in the columellar portion to obtain the desired projection of the nasal tip.

The wax model of the structure is pressed in a dentist's muffle. The wax is liquefied by immersion in hot water for a few seconds. The hollow left when the wax disappears is occupied by an acrylic paste made by mixing a polymerid powder and an isomeric liquid. Pressure is applied several times to prevent bubbles, and a small piece of vitallium is placed according to the need of the individual patient.

The pressed piece is wrapped in tinfoil and placed in the mold, which, mounted in a pressure press, is immersed in boiling water for one hour.

The structure is polished and perforated with a dentist's drill. Sterilization is done in the autoclave with the surgical instruments.

Manner of Introduction: The nose in its entire extent is infiltrated with one point of a local anesthetic (2 per cent procaine hydrochloride plus epinephrine) in the lobule, the needle pointing to the nasal root and changing its direction to the nasal spine (*2*, Fig. 1).

An incision 6 or 7 mm. long is made in the middle portion of the columella (*3*, Fig. 1) to a depth that reaches the nasal septum through the columellar portions of the alar cartilages.

Undermining is performed upward to the nasion and backward to the nasal spine. Sufficient lateral undermining must be done to enable the surgeon to introduce the structure without tension, and to insure that, on contraction of the skin, the prosthesis is not compressed.

Great care must be taken to avoid perforating the skin and the mucous membrane.

The dorsal portion of the structure is first introduced, care being taken to keep its inferior portion far from the cutaneous incision. The columellar portion is then introduced (*4*, Fig. 1). The inferior end of the dorsal piece is lifted with a hook until the projection desired for the nasal tip is obtained (*5*, Fig. 1). This point is marked in the columellar piece, which is extracted again in order to section the necessary portion and then restored to its place, in which it is articulated with the dorsal structure. Two or three stitches are applied in the alar cartilages with stainless steel wire No. 38 in an atraumatic needle. The skin is closed with separate stitches of No. 5-0 dermalon.

Postoperative Care.—A plaster of paris splint is applied. It is maintained in place with a transfixion point (made with stainless steel wire tied over ordinary buttons) and adhesive tape. This splint allows excellent immobilization and does not become deformed by postoperative edema (*6*, Fig. 1).

The stitches are withdrawn within seventy-two hours. The splint is eliminated on the seventh postoperative day.

Terramycin, 1 Gm. daily, is administered during the first seventy-two hours.

The prosthetic structure here described has been applied to 35 patients. In all cases the result is satisfactory.

From the esthetic point of view, I have reached the foreseen result in the models constructed before the operation (Figs. 2, 3 and 4).

From the functional point of view, I have been able to eliminate collapse of the

nais durante a gestação auxiliam a uma tentativa precoce de pensar no diagnóstico levando a uma confirmação final de carcinoma de tal forma que um tratamento precoce se torne possivel.

Os AA. demonstram a existência de um segundo caso em que o carcinoma do colon foi observado acima do sigmoide e o primeiro achado em que se situara no ângulo esplenico. A paciente citada é a segunda de idade tão jovem em que é feito o diagnóstico de adenocarcinoma anaplástico do colo acima do reto conforme citação da literatura consultada.

RESUMEN

Estudios estadísticos, demuestran que la localización del cáncer del colon es la misma en pacientes embarazadas y no embarazadas.

Una historia cuidadosa respecto a los cambios de hábitos intestinales durante el embarazo ayudan a hacer un diagnóstico tentativo y un diagnóstico final de confirmación de carcinoma del colon, para que un tratamiento temprano y definitivo pueda instituirse.

Los autores reportan el segundo caso comprobado en el cual el carcinoma del colon se observó por encima del colon sigmoide y el primero en quien ocurrió en el ángulo esplénico. La paciente es la segunda en menor edad, en mujeres embarazadas, que aparece en la literatura con diagnóstico de adenocarcinoma anaplástico del colon por encima del recto.

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> Discovery reveals new knowledge, but the new vision which accompanies it is not knowledge. It is *less* than knowledge, for it is a guess; but it is *more* than knowledge, for it is a foreknowledge of things yet unknown and at present perhaps even inconceivable. Our vision of the general nature of things is our guide for the interpretation of all future experience.
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> - -*Polanyi*

Reconstruction of the Labia

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MOST papers dealing with the subject of carcinoma of the vulva describe the radical surgical treatment accepted by most clinics and then present statistics on the survival rates following surgical intervention. Few papers, however, mention the follow-up symptomatic care of the patient, and most of them also fail to mention the distressing symptoms that continue several months or years after the operation.

Actually, carcinoma of the vulva is rare. It has been estimated that of 20 cases of carcinoma of the female genital tract, only 1 is a malignant neoplasm of the vulva.[1] There are several benign lesions of the vulva, however, that frequently require radical vulvectomy—leukoplakia, intractable pruritis and venereal granulomas.

Way[2] stated that an operation for carcinoma of the vulva is incomplete if it is possible to close the wound primarily. He makes no attempt to close the wound postoperatively, but waits for it to "granulate in." Twombly[3] stated that the most difficult problem in radical vulvectomy is to obtain primary wound healing in the groin and that frequently, after primary closure, necrosis of the skin takes place. When this happens the blackened skin area is resected and the granulating area covered with pinch grafts. Cosbie[4] stated that in his practice primary closure is done whenever possible; in circumstances that make it impossible he does not like to resort to skin grafting but allows the wound to granulate and undergo spontaneous re-epithelialization. Collins and his collaborators[5] stated that, in treating malignant disease of the vulva, wide excision at the time of operation is imperative, no consideration being given at the time to the manner of closure of the defect created by the operation. He added that the denuded areas that are not subject to primary closure will heal by granulation, or they can be epithelialized by skin grafts. McKelvey[6] stated that in his experience a large number of the wounds broke down as a result of cutaneous necrosis due to excessive tension, and that a large number of procedures have been tried in an attempt to avoid this. Leaving the wound open or applying skin grafts at the original operation made no improvement. In his opinion the wound should be left open; subsequent skin grafting or secondary revision is a satisfactory substitute.

A few surgeons have tried to circumvent the frequent occurrence of slough by advocating reconstructive repair of the large denuded area resulting from radical resection of the vulva. The type of graft most commonly employed, however, is the pinch graft. Occasionally one reads a report describing a successful attempt to close the wound with split thickness graft or flap. Robertson[7] reported 1 case in which, in order to cover the large bare area thus exposed, the adjacent skin was undercut in all directions and, in addition, on the right side a large flap was cut from the thigh and twisted medially so that its upper edge became the right side of the vaginal introitus. Mitchell[8] reported 1 case of radical vulvectomy done for extensive leuko-

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significance of its existence, will become evident.

During the past four years an amazing amount of evidence has accumulated to support the contention that the weak link, or "Achilles heel," of the entire endocrine system is represented by the gonads. The individual endocrine glands are mutually dependent on interglandular stimulation for relatively balanced secretory activity. The influence of the pituitary is of major import to the target gland, but receptivity to pituitary stimulation depends on a healthy balance of mutual stimulation among the remaining endocrine glands. It is easy to understand, therefore, a generalized involution of secretory activity when one member of the chain completely fails to satisfy the metabolic demands of body economy.

The basic function potential of the individual members of the endocrine system should be emphasized. Albert[1] has described the reserve potential of the pituitary gland of the aging person. His contention has been supported by evidence from this laboratory, which emphasizes the fact that the pituitary gland, even in a man or woman aged 80, is capable, under proper stimulative conditions, of the normal secretory activity of a middle-aged person. According to Starr,[2] the thyroid gland will develop normal secretory activity in persons of advanced age, presuming that adequate pituitary stimulation is present. Certainly Gallagher[3] and Tyler[4] have made evident the tremendous reserve potential of the adrenal glands during the declining years. Both have expressed the opinion that the adrenal is not only the most active endocrine gland in the aged person but that, in proper circumstances, it will secrete its basic steroids at a rate expected for persons in the 40-year age group. As early as 1940, the effective secretory activity of the pancreas in the aged person was described by Meyer.[5] It would seem, therefore, that the gonads deserve a thorough inspection as possible causative agents of the endocrine imbalance associated with the aging process.

It is of paramount importance to bear in mind that the gonads have two major functions in body economy: (1) reproduction and (2) steroid secretion. The first is the shorter-lived of the two functions. Although vital to the preservation of the race, reproductive function represents, in all honesty, only a minimal amount of total gonadal activity, even during the young adult years. The second, and actually the primary, function of gonadal activity is the secretion of the sex steroids, estrogen, progesterone and testosterone, which are vitally important in carbohydrate metabolism, protein storage, creatinine metabolism and even the regulation of storage and the excretion of various electrolytes (Kochakian[6]). One must be primarily concerned with these basic functions of gonadal activity in body economy at various ages.

From a purely surgical point of view, need there be concern with any unfortunate metabolic aftermath to oophorectomy? This question should most certainly be answered in the affirmative. It is decidedly incumbent upon the surgeon who performs an oophorectomy to protect the patient against the metabolic imbalances resulting from the withdrawal of sex steroids on any permanent basis.

It cannot be emphasized too strongly that the type of long-range steroid protection suggested in the last few years is in no sense a primary attempt to protect any person, male or female, against the symptoms of a surgical or physiologic menopause. True, if one surgically castrates a 40-year-old woman, the usual symptoms associated with the immediate postoperative period, such as hot flashes, occipital headaches, extreme nervousness and lassitude, are to be avoided if at all possible. In

I checked this patient periodically in my office, and on June 8 it was noted that the whole perineal floor showed softening and there was complete absence of any further scar contraction (Fig. 3 *A*). She stated that she was considerably relieved and that she no longer had the annoying pulling sensation about the vagina. She was no longer incontinent of urine; she was able to sit comfortably and to climb stairways with much more ease. In addition, there was complete absence of irritation of the skin on the thighs when she walked. I last saw her on April 11, 1956, one year after operation (Fig. 3 *B*). Examination revealed moderate flattening of the two reconstructed mounds of soft tissue, but the entire area was soft and there was no recurrence of scar contraction. The patient did complain of some tightness over the anterior right hip joint, at the site of the lymph node dissection. This was due to a vertical contracted scar crossing Poupart's ligament. Since this symptom was rather minimal, however, no further surgical intervention was recommended.

This case demonstrates the condition that exists in the perineal region in many patients who have undergone radical vulvectomy. In this patient the wound in the perineum had healed primarily after radical vulvectomy, and yet considerable scar contraction developed, with accompanying symptoms. I can imagine what the condition of the perineum is when necrosis of the skin develops after vulvectomy and the wound is allowed to heal by granulation. This case is presented in order to describe a simple one-stage procedure for release of scar contractions about the perineum and reconstruction of the labial folds in patients who have annoying symptoms after radical vulvectomy. In selected cases this technic could be employed as a secondary reconstructive procedure when primary skin grafting is contraindicated during the original operation, whether because the patient is classed as a poor risk (usually an elderly patient) or because of the surgeon's reluctance to prolong an already lengthy operation. I am strongly convinced, however, that in many instances and under ideal conditions, proper reconstructive repair during the original operation would obviate this type of secondary procedure.

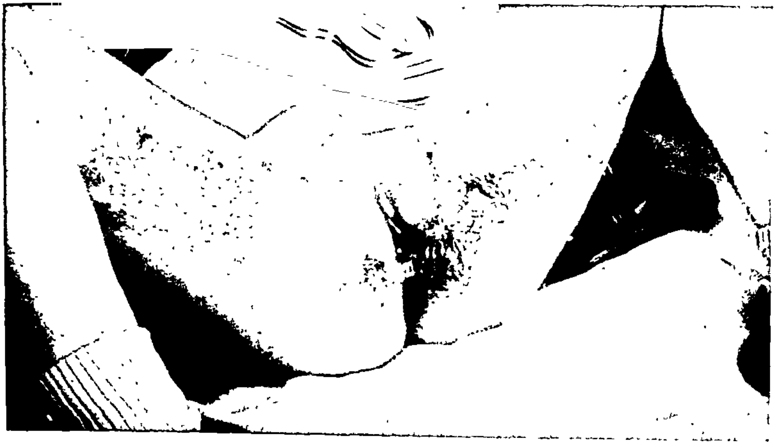

Fig. 5.—Contracted scarring of left perineal area.

range of virtually the entire population of the United States, owing to mass production of the combined steroid medication by the various pharmaceutical houses. Physiologically there is no longer any question as to the efficacy of replacement technics. At present there is no humoral reason for leaving ovarian tissue after reproductive function has been destroyed.

The "neutral gender" may be obtained either surgically or physiologically and treated with equal effectiveness, regardless of the point of origin. It is incumbent upon the surgeon who explores the female pelvis, however, to protect the patient during the remainder of her postoperative years. Once this demand for postoperative protection has been completely accepted by the medical profession, patients will be guaranteed more physiologically efficient lives. This responsibility must be accepted by those who remove ovarian tissue surgically as well as those who contend with the medical complaints arising from the normal physiologic aging processes.

SUMMARY

Elective oophorectomy in patients over the age of 40 should be undertaken by surgeons who explore the female pelvis for operative pathologic change. It is incumbent upon the surgeon to provide his patient with long-range protection from the physiologic imbalance resulting from surgical ablation of the sex steroids, as well as the short-lived storm of the menopausal syndrome. This responsibility is effectively met now that adequate weapons for protection of the patient are available to the medical profession.

RIASSUNTO

I chirurghi che intervengono sulla pelvi femminile in malate che abbiano superato l'età di 40 anni devono praticare l'ovariectomia elettiva. E', inoltre, dovere del chirurgo dare alla sua paziente adeguata protezione contro lo squilibrio ormonico conseguente alla soppressione chirurgica degli steroidi sessuali come pure contro la burrasca della sindrome menopausale.

Questa responsabilità è tanto più sentita oggi che il medico ha a sua disposizione adeguate misure per la protezione delle pazienti contro tali eventi.

RÉSUMÉ

L'oophorectomies de choix chez les malades de plus de 40 ans devrait être pratiquée par des chirurgiens examinant le pelvis à la suite de modifications pathologiques. Il incombe au chirurgien d'assurer à ses malades une protection de longue durée contre le déséquilibre physiologique résultant de l'ablation chirurgicale des stéroïdes sexuels, cela grâce aux produits de la pharmacopée moderne.

ZUSAMMENFASSUNG

Der Chirurg, der explorative Operationen wegen krankhafter Veränderungen im weiblichen Becken ausführt, sollte bei ausgewählten Kranken von über 40 Jahren eine Resektion der Eierstöcke vornehmen. Es ist seine Aufgabe, die Patientin vor den durch Ausfall der Geschlechtshormone entstehenden Störungen des physiologischen Gleichgewichts zu schützen und ihr die stürmischen Erscheinungen der Menopause zu erleichtern.

Es stehen dem Arzt heute ausreichende Mittel zur Erfüllung dieser Forderung zur Verfügung.

SUMARIO

A ovariectomia em pacientes de idade acima dos 40 só deveria ser realizada de forma seletiva pelos cirurgiões capacitados

culdade encontradas para a síntese de ferida perineal após a vulvectomia total, especialmente indicada para tratamento dos tumores malignos e benignos. As técnicas operatorias descritas tem indicação nos casos de sequelas da vulvectomia comportando também a associação da operação radical e do emprego imediato dos métodos de reparação citados pelo A. Dessa maneira se elimina a necessidade de tratamento reparador em estágio posterior.

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> Theories of the scientific method which try to explain the establishment of scientific truth by any purely objective procedure are doomed to failure. Any process of inquiry unguided by intellectual passions would inevitably spread out into a desert of trivialities. Our vision of reality, to which our sense of scientific beauty responds must suggest to us the kind of questions that it should be reasonable and interesting to explore. It should recommend the kind of conceptions and empirical relations that are intrinsically plausible and which should therefore be upheld, even when some evidence seems to contradict them; and tell us also, on the other hand, what empirical connections to reject as specious, even though there is evidence for them and we may as yet be unable to account for this evidence on any other assumptions.
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> —*Polanyi*

Simultaneous Intrauterine and Abdominal Pregnancies at Term

Report of a Case

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COMBINED pregnancies are described as those that exist simultaneously in the uterus and outside it. They are extremely rare, and careful study of the literature, both by myself and by the Department of Obstetrics and Gynecology of the University of Mississippi has revealed only 13 recorded cases in which the pregnancy went to term and the child was delivered.

The patient was checked at intervals of two weeks instead of three, and, except for mild edema of both legs, no abnormality was revealed. It was therefore surmised the usual type of multiple pregnancy existed.

On June 23 the patient again presented herself, with more than usual abdominal pain and discomfort. At this time, under sterile conditions, a vaginal examination was done. To my great surprise I could neither palpate nor visualize the uterine cervix. Posteriorly, the vaginal vault was smooth throughout. My first thought, of course, was the possibility of congenital atresia of the cervix. Consultation was obtained, however, and my consultant agreed that neither of us knew *what* we were *dealing with! In retrospect it was easy to see* that the abdominal pregnancy had pushed the cervix in an anterior direction, so that it could
palpated under the symphysis pubis.
d, however, agree that normal labor
t take place in this patient, and opera-
rvention was decided upon.

e 23, fifteen days prior to term, a
arean section was done. With the
der pentothal and cyclopropane an-
a left muscle-splitting incision was
uterus was opened in the classic
a normal, spontaneously crying
delivered. There was no other
uterus. The incision was there-
and a large membraneous sac
econd uterus was encountered.
nd ovary overlying the sac ap-
Upon opening this sac we rec-
ary abdominal pregnancy. A
delivered; she appeared larg-
trauterine baby. This child
aneously upon delivery.
was attached over the lateral
erus, the sigmoid portion of
abdominal portion of the
of bifurcation of the iliac

piel de la cara en las áreas afectadas. En tales casos, escasez de la fibra elástica de la piel se ha notado. El tratamiento preferido en esos casos fué abrasión quirúrgica y meloplastía y en pocas ocasiones, solo meloplastía. Se cree que los arrugas prematuras pueden deberse a fibrosis en las áreas cicatrizadas tanto como a la escasez del tejido elástico.

RIASSUNTO

Nei pazienti con cicatrici da acne è stata notata una precoce ruosità della cute del viso nelle zone colpite. In tali sedi vi sarebbe una diminuzione delle fibre elastiche cutanee. La cura migliore è la abrasione chirurgica associata a meloplastica o, talvolta, la semplice meloplastica.

Tale precoce rugosità potrebbe essere causata, oltre che dalla diminuzione del tessuto elastico anche da una fibrosi della cute nelle zone cicatriziali.

RÉSUMÉ

Les malades atteints de cicatrices acnéiques peuvent présenter des rides faciales prématurées dans les régions marquées. Dans ces cas une diminution de la fibre élastique de la peau a été constatée. Le traitement préféré de l'auteur est l'abrasion et la méloplastie chirurgicales, parfois la méloplastie seule. Les rides prématurées peuvent être dues à une fibrose des régions cicatricielles, ainsi qu'à une diminution des fibres élastiques.

ZUSAMMENFASSUNG

Bei Kranken mit Aknenarben kann es zu vorzeitiger Faltenentwicklung der Gesichtshaut in die narbigen Gebiete hinein kommen. In solchen Fällen wird ein Verlust der Haut an elastischen Fasern beobachtet. Die beliebteste Behandlung bestand in chirurgischer Abschabung und Wangenplastik und in manchen Fällen ausschliesslich in Wangenplastik. Die Tatsache wird anerkannt, dass die frühzeitige Faltenbildung ebensowohl durch Fibrose in den narbigen Gebieten zustande kommen kann als durch Verlust elastischen Gewebes.

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> The everlasting pushing and striving of blinded mortals in order to gain so and so much, to secure some honor or other, to do a service to this or that great personage—this is generally fatal to our welfare, this is a common cause of young people ageing and dying before their time.
>
> —*Lewis*

SUMARIO

Comunicação de um caso em que coexistiram gravides abdominal e intrauterina numa primípara de 23 anos de idade. O parto foi feito por cesariana e o feto intra-uterino permaneceu normal e sadio. Porque não existia outro feto dentro do útero a incisão foi alargada revelando a presênça de um saco membranoso que se parecia com um segundo útero. Foi reconhecido primáriamente como uma prenhês abdominal. O saco foi incisado e uma segunda criança normal nasceu, gritando expontaneamente. Não foi necessário incubadora e a progenitora passou bem. Todos três tiveram alta do hospital no oitavo dia em boas condições.

RESUMEN

Se reporta un caso de embarazo abdominal e intrauterino simultáneos en una primípara de 23 años. El parto se efectuó por cesárea y el feto intrauterino se encontró normal y sano. Como no había otro feto adentro del órgano, se amplió la incisión, revelando un saco membranoso semejando un segundo útero. Esto se reconoció como un embarazo abdominal primariamente. El saco se abrió y un segundo niño se dio a luz, llorando espontaneamente, no se necesitó incubación para ninguno de los dos y la madre también se recuperó bien. Los tres se dieron de alta del hospital en el octavo día después del parto, en buenas condiciones.

◆

courant, soulignant le fait que la greffe idéale est celle qui reproduit le plus fidèlement l'aspect et la structure physiologiques.

Il faut faire preuve de la plus grande prudence pour décider de la nécessité d'une greffe, car bien des lésions peuvent être traitées avec succès par d'autres méthodes. Une étude approfondie de chaque cas est également nécessaire; souvent, en effet, l'on doit tenir compte d'importantes considérations psychologiques.

RESUMEN

Después de un breve resumen de la historia de los injertos de piel, el autor menciona los varios tipos de injertos cutáneos en uso corriente, enfatizando el hecho de que el injerto ideal es el que más se aproxima en apariencia y estructura a la parte que se va a reparar.

También señala que se necesita un criterio cuidadoso para determinar si el injerto es realmente necesario ya que muchas lesiones pueden, manejarse con éxito sin usarlos. Tambien se necesita un estudio cuidadoso del paciente individualmente ya que frecuentemente se encuentran importantes consideraciones de índole psíquica.

ZUSAMMENFASSUNG

Nach einem kurzen Überblick über die Geschichte der Hautplastik erwähnt der Verfasser die verschiedenen gegenwärtig gebräuchlichen Arten von Hauttransplantaten und hebt hervor, dass das ideale Transplantat dasjenige ist, das der normalen Erscheinung und Struktur des zu ersetzenden Teiles am nächsten kommt.

Er weist ferner darauf hin, dass sorgfältig entschieden werden muss, ob eine Transplantation wirklich nötig ist, da viele Verletzungen auch ohne eine solche erfolgreich behandelt werden können. Weiterhin ist es notwendig, sorgfältig auf die Gesamtpersönlichkeit des Kranken einzugehen, da psychologische Faktoren oft eine bedeutende Rolle spielen.

> Without a scale of interest and plausibility based on vision of reality nothing can be discovered that is of value to science; and only our sense of scientific beauty, responding to the evidence of our senses, can evoke this vision. Such is the *selective* function of scientific passion.
>
> —*Polyani*

with articular cartilage, and the structure is similar in all instances being cancellous bone enclosed in layers of compact bone. There is little periosteum. The blood supply enters generally at the distal extremity, although in some instances a second vessel enters the midportion of the bone. Dorsally there are no muscular attachments to any of the carpal bones, while on the volar surface there are no muscular attachments to the navicular, the lunate or the triangular bone.

B. *Motion.* The distal carpals are almost passive, and, although isolated fractures of these bones occur, they are usually associated with injuries to the neighboring bones. The proximal row of carpal bones has a great range of motion. The triangular bone articulates with the articular disc that separates it from the lower end of the ulna. The navicular and lunate bones act as a unit working about the proximal end of the capitate. The navicular and the lunate are the only two bones that have a common articulation with the radius and the capitate; therefore they bear the full impact of violence directed to the heel of the hand. The metacarpal bone of the thumb moves through a greater range than does any of the others; the metacarpal bone of the fifth finger is next in line as regards mobility.

The hand contains fifteen joints, and a good deal of its usefulness is dependent upon the contour of the bones forming the joints.

C. *Angles at the Wrist.* The wrist joint is a condyloid articulation. The styloid process of the radius projects distally approximately ½ to ¾ of an inch (0.6 to 1.9 cm.) below the styloid process of the ulna. The articular surface of the radius projects volarward and ulnarward approximately 15 to 20 degrees. These angles are important as regards treatment of fractures of the distal portions of the radius and ulna.

D. *Articular Disc.* This is a triangular structure that lies between the head of the ulna and the proximal row of carpal bones. It is a fibrocartilaginous plate and extends laterally from the base of the ulnar styloid to become attached to the curved sigmoid edge of the radius. This disc articulates with the triangular bone and the medial part of the lunate bone.

E. *Carpal Tunnel.* The carpal tunnel is a space at the wrist shared by the median nerve and the carpal flexor group of tendons. It is bound down anteriorly by the transverse carpal ligament and not infrequently becomes compressed with the development of symptoms after injuries about the hand and wrist.

Pathologic Physiology.—Physiopathologic Picture: A. *Pain and Loss of Motion.* Injuries to the small bones often provoke a local and a general reaction. Everyone has had the experience of direct injury to the phalanges or metacarpals and is aware that such an injury causes a great deal of pain, together with loss of power, either temporary or somewhat prolonged. Swelling about the hand is often extreme and requires early treatment. It later can often be controlled by elevation of the hand and the use of hyaluronidase.

B. *Bone Repair*: Contrary to popular belief, the union of fractures of the small bones is not rapid. It has been shown[3] that the average time required for bony healing of complete phalangeal fracture is five months. Naturally one does not continue immobilization throughout this period, since clinical union usually occurs in five to six weeks. The carpal bones heal with little or no periosteal reaction, and union occurs by means of endosteal callus. Therefore as regards solid osseous union the roentgenogram is the court of final appeal.

C. *Contractures*: Soft tissue contractures develop rapidly and are difficult to overcome. One must therefore in all cases place the part in the position of function.[4]

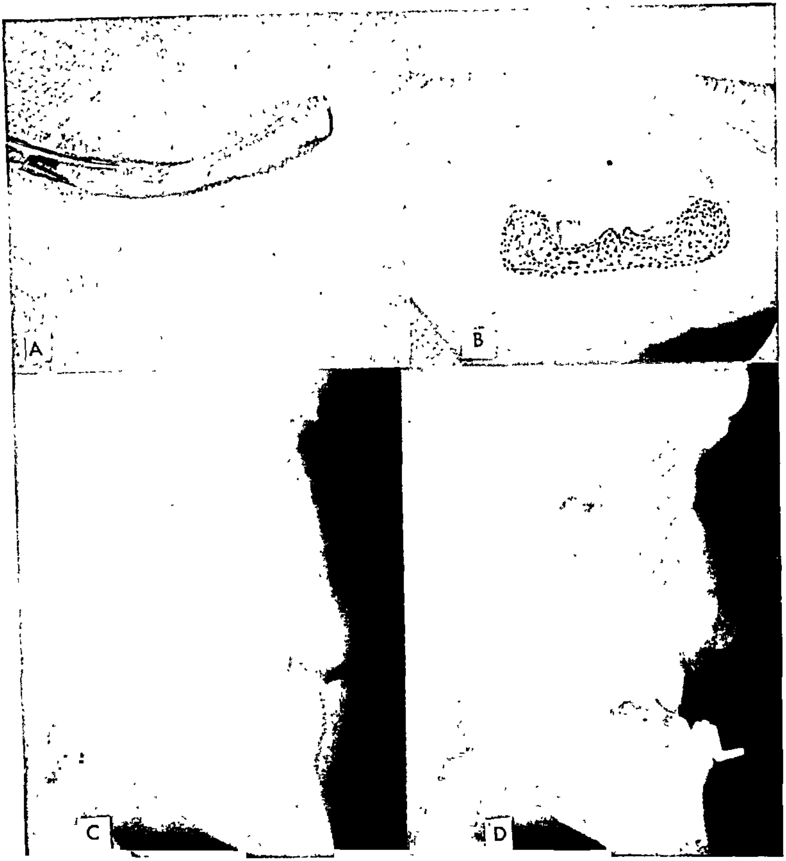

Fig. 4 (*Case 2*).—*A*, bone graft employed in case of this patient. *B*, area of stippling, representing extent of *undermining carried out. Incision employed in surgical approach to area can be visualized.* *C* and *D*, preoperative and postoperative roentgenograms of patient. Note again the extreme underdevelopment and retrusion of the maxilla, with accompanying prognathism.

The operation is carried out with endotracheal anesthesia. The graft is taken from the iliac crest in the conventional manner. The surgical approach to the upper lip is through a curvilinear incision along the base of either the left or the right ala. Undermining is carried out along the floor of the nose, with exposure osseous muscle on the proximal phalanx and extension of the distal fragment by the lumbrical. The fracture can be reduced and maintained only in marked flexion, since it is necessary to release the pull of the muscles causing the deformity. A simple method of maintaining position is one in common use—the placing of gauze in the palmar surface, with plaster for immobilization.

Metacarpal Fractures: Fractures of the metacarpal bone of the thumb and that of the fifth finger are the most troublesome to treat. Fractures of the second, third and fourth metacarpals can usually be treated by traction or splinted without much difficulty. The usual type of fracture of the fifth metacarpal bone is that which occurs just proximal to the head of the metacarpal bone, and the deformity consists in anterior or volar rotation of the metacarpal head. The fracture is frequently impacted. Traction and manipulation with traction through the small finger is an improper method of handling this fracture, which can be reduced and reduction maintained only by flexing the metacarpophalangeal joint, forcing the metacarpal head dorsally and maintaining the fifth finger in flexion.

This fracture, if poorly treated, results in loss of the knuckle and a poor cosmetic effect. It can be maintained in the proper position by means of plaster, and the patient may be allowed to use the remaining fingers throughout the period of immobilization. At the end of five weeks the immobilization is usually removed and active motion encouraged.

Fractures of the First Metacarpal: Those fractures at the base of the first metacarpal bone which enter the metacarpocarpal joint are extremely important. Improper treatment causes a high degree of disability and discomfort—pain, loss of motion and weakness in the grasp. This fracture has been referred to as the Bennett fracture,[8] and, though it has received a great deal of attention since 1882, it is still considered one of the major metacarpal fractures, leading to the greatest amount of disability about the hand. Treatment ranges from the most conservative to the most radical. The important point, however, is to maintain the web between the thumb and the palm of the hand, since an adducted position of the thumb will lead to atrophy of the muscles in the thenar eminence and give rise to a great deal of disability in connection with grasping, pinching or holding.

There are many grades of fractures of the base of the first metacarpal bone. The one that causes the greatest difficulty is the intra-articular type, i. e., the type in which the fracture extends into the metacarpocarpal joint, usually displacing a large triangular fragment volarward permitting the remainder of the articular surface to be displaced posteriorly. Many such fractures are severely comminuted and cannot be completely restored to the normal anatomic status. It has been suggested[9] that the neoarthrosis resulting from a healed, unreduced Bennett fracture affects the so-called ball and socket type of joint, and this represents a more desirable end result than does the natural diarthrodial joint which is structurally weak.

Conservative treatment consists in the reduction and maintenance of the thumb in abduction by means of splints, plaster or traction with a small pin placed through the pulp of the thumb and attached to a loop that has been incorporated in the plaster. The more radical treatment consists in open reduction or the use of intramedullary pin fixation extending through the metacarpal into the greater multangular bone across the joint space.[10] The last-mentioned procedure is not simple; moreover, it is fraught with a good deal of danger. In my experience it is difficult to place the wire, which often penetrates the extensor and adductor mechanism of the

Editorial

Hall of Fame Lectures

MEDIEVAL SURGERY

(*CIRCA 500 to 1500*)

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THE history of medieval surgery, like the history of almost any aspect of Western European civilization during the Middle Ages, can be divided into two periods: the early, or so-called "Dark" Middle Age from about 500 to about 1000, and the late, or High Middle Age, from about 1000 to about 1500. Without quibbling as to the inaccuracies inherent in any such arbitrary dissection of the corpse of history, I start with a survey of surgery during the first of these periods.

Many writers apply to this early portion of the Middle Ages the Gibbon-esque title, "Decline and Fall of (whatever topic is under consideration)." Although I am temperamentally opposed to epoch generalizations, I adopt this title, in slightly amputated form, as a text for my coverage of Western surgery during the early Middle Ages. I call it merely the "Decline," eliminating the expression "fall," since surgery, like other classic activities did not cease abruptly in 476 A.D. or any other specific date. Nor do I approve of the term "dark." Surgically, and otherwise, the centuries following the disintegration of the Roman Empire were not a black night of barbarism, but rather a roughly vigorous age of reconstruction, of pioneering on new frontiers of civilization. To employ a medical simile, it was as if the weakened body of the late Roman civilization had received a transfusion of sturdy, barbaric, red blood corpuscles.

But, without further historical philosophizing, let us turn to the factual evidence concerning surgery during the period following the death (in Rome) of the sixth-century Greek physician, Alexander of Tralles and (in Alexandria) of his surgically minded successor, Paul of Aegina. These two men, trained in Graeco-Roman

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juries to the heel of the hand. The most common injury to the lunate bone is anterior dislocation. Reduction should be carried out early, and immobilization should be prolonged. Reduction with the patient under deep anesthesia can be performed by hyperextending the wrist placing direct pressure over the volar aspect of the wrist and following this with forcible flexion. In my experience, aseptic necrosis of this bone develops rapidly and causes a great deal of disability. Unfortunately, many such dislocations are merely reduced and early motion is permitted; yet early motion, I am convinced, is a factor in the development of aseptic necrosis. One must permit healing of the para-articular structures, with the possibility of ingress of blood vessels, and this can be accomplished only by rigid immobilization. Immobilization in a plaster cast, therefore, with the hand in midposition for not less than six weeks, is indicated. I consider this a factor in the reestablishment of circulation to the lunate bone. As has been mentioned, operation in the presence of aseptic necrosis has been known to reveal that a good deal of the disability in the wrist is due to trauma applied to the articular disc. Therefore, in those cases which surgical treatment is indicated after the development of aseptic necrosis it is suggested that a generous exposure of the wrist joint be obtained so that inspection of the articular disc is possible.

Fracture of the navicular bone is considered one of the major fractures of the upper extremity. This fracture is frequently unrecognized for days or even weeks, because of the absence, in most cases, of displacement and swelling. It is often looked upon as a sprain of the wrist, and treatment is therefore too often delayed. Swelling is slight, there is pain on motion of the wrist, especially on dorsiflexion, with tenderness to pressure in the anatomic snuffbox. One should consider the navicular bone as an extension of the thumb so that pressure or percussion of the extended thumb often causes the patient to complain of pain over the navicular bone. Roentgen study of the wrist should be complete—not only the routine anteroposterior and lateral views should be taken, but two oblique views and a posteroanterior view with the fingers flexed (which throws the navicular into profile) and, if possible, a roentgenogram of the carpal tunnel, which can be gained by hyperextending the wrist, should be included. The vascular supply is extremely important in the healing of a fracture of the navicular bone. The supply arises from two small vessels, one entering the tubercle at the attached carporadial ligament. The other enters the bone at its midposition. Since the healing of a fracture is largely dependent upon an adequate blood supply, the site of the fracture as demonstrated by the roentgen film has a definite bearing upon the prognosis and treatment. Fractures of the tubercle, in which each fracture has a nourishing vessel, will invariably unite in a short time if adequately immobilized. Fractures of the middle third, or "waist," and fractures of the proximal third usually deprive the proximal end of of its blood supply. It has been observed[2] that fractures through the middle third result in an incidence of aseptic necrosis second only to that associated with fractures of the femoral head. Healing of fractures of the middle and proximal thirds take place by endosteal interfragmental osteogenesis. Healing is therefore necessarily slow and immobilization must be prolonged. The fracture requires complete and uninterrupted immobilization until it can be shown roentgenographically that solid osseous union has taken place by the formation of trabeculae across the fracture line.

Reduction of a fracture of the middle third rarely has to be considered, as there primitive, comprising for the most part simple operations such as bloodletting, which could be performed by almost any intelligent man. Wounds were usually treated medically rather than surgically, by applying medicines, medicated sponges or packs. Thus most ailments could be handled by clergymen or laymen trained in fundamentals comparable to a modern first-aid course. There was no place for a specialized profession.

Occasionally a problem in obstetrics, too complicated for the midwives, might be solved by a cesarean section. In sixth-century Spain a bishop of Merida was reported to have saved a mother as follows: "With marvelous skill he made a neat incision with a fine knife and quickly extracted piecemeal the already putrid infant." From St. Gall in the ninth century comes a slightly different case, one in which the baby was saved and the mother apparently lost. Fourteen days ahead of nature's schedule, according to the chronicler, "the infant was cut out of the mother's body and wrapped in the fat of a newly killed pig."

During this warlike age, there was considerable military surgery, probably of a very primitive sort, the amputation of limbs, for example. The law codes mentioned above contain many brief references to wounds which called for surgery of a sort, but no details are recorded. Ninth- and tenth-century chronicles, likewise, make brief references to operations. There is, however, no evidence of anything but the simplest of methods, like the application of medicines to wounds.

From the sixth century Frankish History of Gregory of Tours, however, comes a noteworthy exception. A Frankish royal physician (called *archiater*) told how he had "excised" a boy's testes, performing the operation "the way he once had seen it done by 'medics' in Constantinople." Here is a rare example of the persistence in the Germanic West of a late Greek professional title and of a Greek operational technic. No details are given as to instruments and the like. In general, the surgical instruments mentioned in early treatises, and also the finds of archaeologists, reveal only primitive implements, medicinal packings and simple bandages—among them some for hernia.

We already have called attention to the practice of cauterization, which was performed with a heated knife or iron. Although mentioned in the sixth century as a means of eliminating diseased tissues in both human beings and animals, thenceforth until the eleventh century it all but disappears from Western medical literature. Meanwhile a different usage had captured the Arab world; the application of the cautery iron not only to diseased tissues, but also to various places on the body for the relief of internal as well as external ailments, by drawing the noxious humors to the artificial wound. Manuscripts of the later centuries contain illustrations of human bodies marked with red spots (like those for bloodletting) to indicate the places at which the iron was to be applied. The direct cauterization of wounds was more intelligently handled in both Arab and Christian lands.

Already I imagine that some of my hearers are wondering why I have not mentioned Salerno as an example of light in the dark ages. As a matter of fact I am about to mention it, but in a derogatory fashion of which you may disapprove. Our quoted poetic physician notwithstanding, I deny that the "wisdom nurtured at Salerno" constituted a uniquely progressive center in which the torch of enlightened Greek medical science was held aloft. For example, during a quarter of a century or more of perusal of the sources concerning medicine in the early Middle Ages, I have looked in vain for solid evidences of a medical "school" at Salerno.

Without claiming omniscience for the authorities I cite, I wish to present evidence to the effect that medieval surgery and medicine neither began nor ended with Salerno, a name which might well be eliminated from the historical headlines.

Malunion: Malunion following a Colles fracture may cause a great deal of disability about the wrist. Foreshortening of the radius with prominence of the ulnar styloid, whether or not the articular disc is injured, often leads not only to a poor cosmetic but to a poor functional result. Simple osteotomy of the radius in cases of foreshortening is not sufficient to correct either the deformity or the disability. My experience in those cases in which prominence of the ulnar styloid was present and associated with increased mobility of the inferior radioulnar joint, leads me to conclude resection of the distal end of the ulna, with exposure of the wrist joint, is indicated. Resection of the distal end of the ulna[15] has been advocated for a long time.

This procedure is now popularly referred to as the Darrach operation.[16] It has undergone many changes, some of which are as follows: removal of the distal 3 cm. of the ulna either subperiosteally or extra-periosteally; removal of a portion of the ulna without removal of the styloid process, and cuneiform osteotomy and removal of a wedge with the base projecting laterally. I have observed that exposure of the wrist joint in addition to resection of the ulna enables the surgeon to detect involvement of the articular disc and the fact that this acts as a deterrent to return of the wrist's function. In the past ten years, an internal derangement of the articular disc has been observed in 11 of 20 cases of malunited Colles fracture surgically treated. In all 11 cases the articular disc had been torn away from its attachment to the radius and there was hypermobility of the distal radioulnar joint. It is suggested, therefore, that in operating on malunited Colles fractures with mobility of the distal radioulnar joint the wrist joint be inspected for a possible involvement of the articular disc.

Late Tendon Rupture: Spontaneous ruptures of the extensor pollicis longus tendon after consolidation of Colles fracture has been reported since 1876.[17] Reports have also appeared in the literature on rupture of the extensor digitorum communis tendon following fractures about the wrist[18] as well as rupture of the extensor pollicis longus tendon following fractures of the navicular bone.[19] The extensor pollicis longus tendon is exposed to injuries at the lower end of the radius and to those of the navicular bone. Rupture of this tendon is more common in the female than in the male, which can probably be explained by the fact that the groove occupied by this tendon at the lower end of the radius is somewhat more shallow in the female than in the male and is thus exposed to injury. Direct injury to the tendon at the time of the fracture or attrition during the healing phase has been suggested as the cause. Usually the rupture occurs within weeks or months after complete consolidation of the fracture. It may occur spontaneously or after even mild use of the thumb. In some instances the degeneration of the tendon may not permit end-to-end suture at the point of rupture. In this case tendon transfer is necessary, and one can make use of the extensor indicis proprius tendon. I have used this procedure on 4 occasions, with completely satisfactory results.

Nonunion: Nonunion of the navicular bone occurs more commonly than does nonunion of any other bone about the wrist. This is due to several factors: delay in treatment, improper immobilization, incomplete immobilization or too short a period of immobilization. With early recognition, reduction, proper and uninterrupted immobilization, union should occur in the vast majority of cases, with little permanent disability.[20] Fractures through the middle or "waist" of the navicular bone are those which cause the greatest number of delayed unions or nonunions.

> from the wound. After this, the testicle is cut away from the intestine with hot irons, a little below the ligature in order *not* to loosen it. . . . When the putrid and burned flesh comes away, that is to say about the 7th or 8th day, we remove the cord. . . ."

Similarly impressive is a description of intestinal suturing, from the *Surgery of Roger*:

> ". . . If the intestine becomes herniated by any wound . . . in the first place if the weather is cold . . . a live animal is cut down the middle and laid upon the intestines and left there until they become warm and . . . softened. Meanwhile a cannula is made of elder wood in the shape of the wound of the intestine, but one inch longer than the wound at each end. . . . It is inserted through the wound, which is sewed with a sharp needle and a silk thread. The cannula is placed there in order that the contents of the intestine may pass through it and that the suture may not make an obstruction. . . . The dirt is washed gently, . . . the intestines are replaced in the abdomen . . . and then the patient is placed on a plank and shaken in order that the intestines may slide into their proper place. . . ."

This technic, which was used by Roger and perhaps by other twelfth-century surgeons, was improved later by substituting for the wood cannula a windpipe cut from an animal. It is obvious that these men were improving on their predecessors in operational procedures.

It is apparent, however, that South Italy, the region of Roger and Constantine, though progressive, was not the only region of progressive surgery. In fact North Italy eventually surpassed Salerno both in the quantity and the quality of its surgical writings. Roger of Salerno was followed by Master Maurus and Johannes Jamati, but Roland of Parma's work centered in North Italy, and the "Four Masters" are thought to have been French. So far as the famous health poem, entitled "The School of Salerno," is concerned, it contains nothing of importance concerning surgery. Meanwhile Constantine's translations of Arab treatises were being rivaled by new translations by Gerard of Cremona in *Spain. As a result the Arabs, Avicenna* and Abulcasim, were soon to become as important as the Constantinian translations of Galen and other classic writers.

Shortly after the twelfth century, surgical interest moves northward, leaving Salerno with its past, and fading, glory. However, one final glimpse reveals it, shortly before 1250, as a still flourishing surgical center, recognized as the greatest in his realm by the Hohenstaufen emperor of South Italy and Sicily, Frederick II. The constitution promulgated for his kingdom in 1231 at Amalfi, a few miles up the coast from Salerno, contained detailed regulations "Concerning Medics." They must study for three years as pre-"medics," then five years as "medics," including some study of surgery. After examination and certification by the professors at Salerno, the royal court granted the candidate "a license to practice," but only after one year of apprenticeship under an experienced physician. A surgeon could be licensed separately, after testimonials from his professors proved that "he has studied for at least a year in that field of medicine which develops skill in surgery, and in the anatomy of human bodies, and also that he is proficient in that field of medicine without which incisions cannot be safely made, nor fractures healed." From the fact that the twelfth-century regulations of Frederick's Norman predecessor (King Roger II), on which his were based, contained no specific provisions concerning surgery, we may infer that surgery as a separate profession emerged at some time between 1150 and 1250 at Salerno as well as in more northerly regions. One other point, Frederick's regulations restricted the teaching of medicine and surgery in his realm to Salerno, and to professors licensed by action of both their fellow professors and state officials. The age of state-controlled medical schools and practice had arrived. After the time of Frederick, the record shows more remarkable progress in North the extremities and therefore institute measures that often are detrimental to proper management.

This syndrome demands early recognition as well as early and proper treatment. The signs and symptoms are as follows: loss of motor function of the extremity, characteristic roentgen changes, vasomotor disturbances and great pain. The usual history is that of an injury, often trivial, to the extremity, followed within a week or two by pain out of all proportion to the injury, loss of motor function, swelling and characteristic rapid roentgen changes. This is followed by rapid atrophy of the soft tissues. The roentgen changes are characteristic; there is a patchy or motheaten appearance that has been described as "flächlich." The patient will resist all attempts at motion of the extremity, and in most cases complete rest is followed by relief from pain. In the typical case the acute phase, if untreated, will be prolonged for several months and cause a great deal of disability as a result of atrophy and loss of motor power; it is not unusual for the period of disability to extend for six months to one year.

Several theories have been advanced as to the cause of this syndrome. The role of the chemical changes that occur after trauma has been considered. It has been proposed that the formation of histamine after an injury, causing immediate dilation of the blood vessels with prolonged hyperemia as a result of continued irritation, is a factor in the absorption of the elements from bone. The theory has been proposed that acetylcholine is also liberated and that its action is powerful and its effects prolonged and pronounced. There is also the possibility that acetylcholine may be the transmitter of parasympathetic vasodilator effects.

The possibility that this syndrome is nothing more than disuse atrophy has not been widely accepted. It has been shown by many[23] that the changes characteristic of this syndrome are entirely unlike those encountered in bone as a result of disuse or nonuse.

The generally accepted view is that the condition is a reflex type of dystrophy and is the result of the setting up of pathologic post-traumatic reflexes, with consequent changes in the soft tissues, the vascular bed and the bone. This hypothesis has been profoundly studied and has come to be generally accepted.

The treatment of this condition requires great patience on the part of both patient and surgeon, together with attention and knowledge of the underlying factors that have given rise to this complex syndrome. Cervical sympathectomy[23a] has been advanced as a method of treatment. This, of course, seems paradoxic, in that sympathectomy would give rise to vasodilatation and seemingly further the changes in the bones and soft tissues. Many good results, nevertheless, have been reported. In the light of present-day treatment it appears that a more conservative approach is indicated. This consists in measures to relieve pain and reverse the process, plus an intensive program of rehabilitation for the extremity.

In the early stages motion without pain is almost impossible. A short period of immobilization with, however, some attempts at motion, should be carried out. Relief of pain and reversal of the process should be attempted immediately. This can be obtained in the great majority of cases by immobilization for a short period and the use of ganglionic blocking agents.[24] It has been my practice in the past four years to employ injections of hexamethonium, and the relief obtained has been most gratifying. My experience indicates that Sudeck's atrophy will respond to conservative treatment if it is discovered early and intensive treatment instituted. During the period of the use of ganglionic

New Books

Books Received.—The following books have been received by the Editor; they will be reviewed critically as space and facilities permit. Omission of more extended review, however, is not to be taken as criticism of the merit of the book.

***Bases Physiologiques de la Chirurgie* Neuro-Vasculaire** (The Physiologic Bases of Neurovascular Surgery). By C. Mentha. Paris: Masson et Cie, 1956. Pp. 148, with 32 illustrations. *Reviewed in this issue.*

Lymphatics, Lymph and Lymphoid Tissue. By Joseph Mendel Yoffey and Frederick Colin Courtice. Cambridge, Mass.: Harvard University Press (for the Commonwealth Fund), 1956. Pp. 510. Illustrated.

Handbook of Physical Therapy. By Robert Shestack. New York: Springer Publishing Company, Inc., 1956. Pp. 212.

Atlas of Tumors of the Nervous System. By H. M. Zimmerman, Martin G. Netsky and Leo M. Davidoff. Philadelphia: Lea & Febiger, 1956. Pp. 191, with 277 illustrations (233 in color).

Etiologic Factors in Renal Lithiasis. By Arthur J. Butt. Springfield, Ill.: Charles C Thomas, Publisher, 1956. Pp. 401, with 153 illustrations. *Reviewed in this issue.*

Chirurgia du Pancréas. By Lucien Leger and Jacques Bréhant. Paris. Masson et Cie, 1956. Pp. 504. Illustrated (collection of Henri Mondor). *Reviewed in this issue.*

How to Enjoy Good Health. Edited by Cyril Solomon and Brooks Roberts. New York: Random House, 1956. Pp. 240.

Diagnostic Procedures for Virus and Rickettsial Diseases. American Public Health Association. New York: Publication Office, American Public Health Association, 1956. 2d ed., Pp. 578. *Reviewed in this issue.*

Head Injuries and Their Management. By Francis Asbury Echlin. Philadelphia: The J. B. Lippincott Company, 1956. Pp. 127, with 10 illustrations.

Pye's Surgical Handicraft. Edited by Hamilton Bailey. Bristol: John Wright & Sons, Ltd., 1956. 17th ed. Pp. 800, with 860 illustrations. *Reviewed in this issue.*

Les Ecrasements Thoraciques (Crushing Injuries of the Chest). By Jean Garby, Michel Garbay and Claude Vanderpooten. Paris: Masson et Cie, 1957. Pp. 132. *Reviewed in this issue.*

The Stress of Life. By Hans Selye. New York: McGraw-Hill Book Company, Inc., 1956. Book V. Pp. 324.

Ciba Foundation Symposium on Bone Structure and Metabolism. By G. E. W. Wolstenholme and Cecilia M. O'Connor. Boston: Little, Brown & Company, 1956. Pp. 299, with 121 illustrations. *Reviewed in this issue.*

Practical Office Gynecology (Obstetrics and Gynecology Series, edited by Caude E. Heaton). By Albert Decker and Wayne H. Decker. Philadelphia: F. A. Davis Co., 1956. Pp. 388, with 103 illustrations, 19 in color. *Reviewed in this issue.*

Clinical Urology. By Oswald Swinney Lowsley and Thomas J. Kirwin. Baltimore: The Williams and Wilkins Company, 1956. 2 volumes, profusely illustrated; drawings by William Didusch.

langer Knochen und anderer grösserer Körpergebilde mögen zwar eindrucksvoller und aufregender erscheinen, aber die Verletzung kleiner Knochen erfordert nicht geringere Sorgfalt und volle Kenntnis der anatomischen und pathologisch-physiologischen Verhältnisse. Der Verfasser setzt sich ferner für grössere Zurückhaltung im Hinblick auf chirurgisches Eingreifen ein. Die Ausführung innerer Fixierung, die in den Händen von Einigen zu guten Ergebnissen geführt hat, sollte ausschliesslich denen überlassen bleiben, die völlige Sicherheit auf diesem Gebiet besitzen. Die Rolle, die die Gelenkscheibe als wichtiger Faktor in der Entwicklung der Untauglichkeit des Handgelenks spielt, wird besonders hervorgehoben, und eine Behandlung derartiger Behinderungen wird in Vorschlag gebracht.

Die Komplikationen und Folgeerscheinungen von Verletzungen kleiner Knochen und der anliegenden Gebilde erfordern grosse Wachsamkeit und frühzeitige Einleitung energischer geeigneter Behandlung.

CONCLUSIONS

L'auteur lance un appel en faveur du traitement conservateur des lésions des os courts. Les fractures et lésions des os longs sont plus spectaculaires, mais celles des os courts exigent tout autant de précautions, ainsi qu'une connaissance approfondie de l'anatomie et de la physiologie pathologique. L'utilisation d'une fixation interne donne quelquefois de bons résultats, mais de telles techniques ne devraient être pratiquées que par des spécialistes expérimentés. L'auteur souligne le rôle du disque articulaire dans le développement de l'incapacité du poignet et en indique le traitement.

Les complications et les séquelles des lésions des os courts exigent un traitement approprié précoce et intensif.

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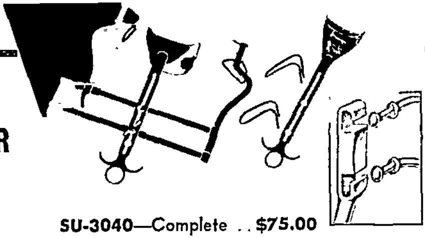

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Otorhinolaryngologic Surgery

Effects of Smoking on the Respiratory Tract

LINDEN J. WALLNER, M.D., D.A.B.

CHICAGO, ILLINOIS

OVER the years, numerous articles have appeared in the literature on the medical aspects of smoking. These have included studies on the composition of tobacco smoke, the results of applying these components to experimental animals and the local and systemic effects of smoking on various body systems. More recently, articles have appeared that tend to show that smoking is related to pulmonary carcinoma and heart disease. These have received wide circulation in the lay press. It is a subject that seems to generate considerable controversy, and there is often a prompt reply by another author who denies the connection between smoking and serious disease.

It is so evident as to seem almost axiomatic that tobacco smoke is irritating to the mucosa of the respiratory tract. The composition of smoke has been studied and the constituents shown to be irritating to animals. An animal test[1] measures the irritation by determining the amount of edema of the rabbit conjunctiva exposed to tobacco smoke. A nonsmoker notices burning of the eyes and lacrimation after spending an evening in a smoke-filled room. Most smokers will admit such symptoms as burning of the tongue and mouth, dryness of the throat, postnasal discharge, hoarseness and cough, which they attribute to their smoking or to having increased their usual quota. The controversy would seem to be not whether smoking causes irritation, but whether this irritation is significant and how, and whether it may lead to serious consequences.

In this presentation I shall review several recent histopathologic investigations, epidemiologic and statistical studies and attempt to correlate them with clinical observations.

The larynx is the commonest site in the respiratory tract to reveal changes considered due to excessive smoking. This may be explained by the careful studies of Proetz,[2] who observed that products of combustion are deposited in a tube just beyond a kink or constriction due to eddies in the air flow. The baffle plate effect of the cords seems to act in a manner similar to that of the constrictions in the glass tubes.

The mouth and pharynx are less commonly affected. An additional factor here is the cleansing action of saliva, food and liquids. The nose and nasopharynx rarely reveal changes. Smoke is exhaled through the nose only at times, and there is an active flow of mucus, owing to ciliary activity.

Alterations of the respiratory tract commonly attributed to smoking are (1) chronic nonspecific inflammation; (2) polypoid degeneration of the vocal cords; (3) leukoplakia, and (4) carcinoma.

Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-13, 1956.

From the Department of Otolaryngology, University of Illinois College of Medicine, and the Presbyterian Hospital of Chicago.

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Comments by the Founder

PROMISE AND FULFILLMENT

In that memorable year 1935, when "something new under the sun" was burgeoning into actuality and putting forth its first twigs of promise, now branching all over the world as the International College of Surgeons, I received some singularly wise and forward-looking counsel from a dear and honored colleague and friend, Dr. André Crotti. "We must never for a moment forget," said Dr. Crotti, "that our purpose is to plan and establish a *college*. We must begin and end as a *teaching organization*. In no other way can we avoid the loss of direction and scattering of attention and effort that assail so many other professional organizations. Since our principal aim is to disseminate surgical knowledge on a basis of international friendship, we cannot neglect the prime duty of every surgeon to pass on to others, for the ultimate good of humanity, whatever his studies and his experience have taught him."

Of no man can it be said more confidently than of Dr. Crotti that he is a living example of the great truth, "If thine eye be single, thy whole body shall be full of light." In this instance the light of Dr. Crotti's wisdom was fully shared by myself, and I gave him my solemn promise *that as long as I lived I would exert all my* efforts toward maintaining the College first of all as a teaching institution. I am proud to say that I have never been unmindful of that promise and have done everything in my power to fulfill it.

Today it is obvious that this effort has been successful. The educational activities of the College extend far and wide. We are in intimate liaison with the Faculty of Medicine of Vienna and many other European faculties. Many of those who regularly offer postgraduate courses under the auspices of the College, and many others who open their clinics and hospitals to visiting Fellows of the College from other nations, are among the most eminent and learned surgeons of the world. To mention only a few, these include Profs. Darget of Bordeaux, Soler-Roig of Barcelona, Paolucci of Italy, and Mandl and Schönbauer of Vienna. The late Prof. Hans Finsterer, whose learning and skill long since earned his permanent fame, was President of the College and for many years one of its staunchest supporters.

Dr. Max Thorek

In addition to the courses offered by these world-famous colleagues and by Fellows of like stature in many other nations, we have recently set in motion our annual *Around-the-World Postgraduate Courses* and Surgical Clinic Days, which have brilliantly met and greatly exceeded all expectations. The first of these, which took place in 1955 and which I was fortunately able to accompany as participant and official guide, carried us to Hawaii, Japan, Formosa, the Philippines, Hong Kong, Thailand, India, Pakistan, Israel, Turkey, Greece and Italy. The second, in 1956, under the leadership of Dr. Neal Owens, included visits to Hawaii, Japan, Formosa, the Philippines, Hong Kong, Thailand, India, Pakistan, Iran, Turkey and Greece. The 1957 tour will be conducted by Dr. Arnold S. Jackson, immediate Past President of the United States Section of the College, and Dr. Edward L. Compere will officiate in 1958. Wherever the visiting surgeons go, they receive a royal welcome and are privileged to attend the lectures, demonstrations, operations and clinics of

Mr. Edouard Chassaing, noted sculptor of the Chicago Art Institute, finishing statue of Pasteur. The completed work will be placed in the Speidel Hall of Immortals, International Surgeons' Hall of Fame.

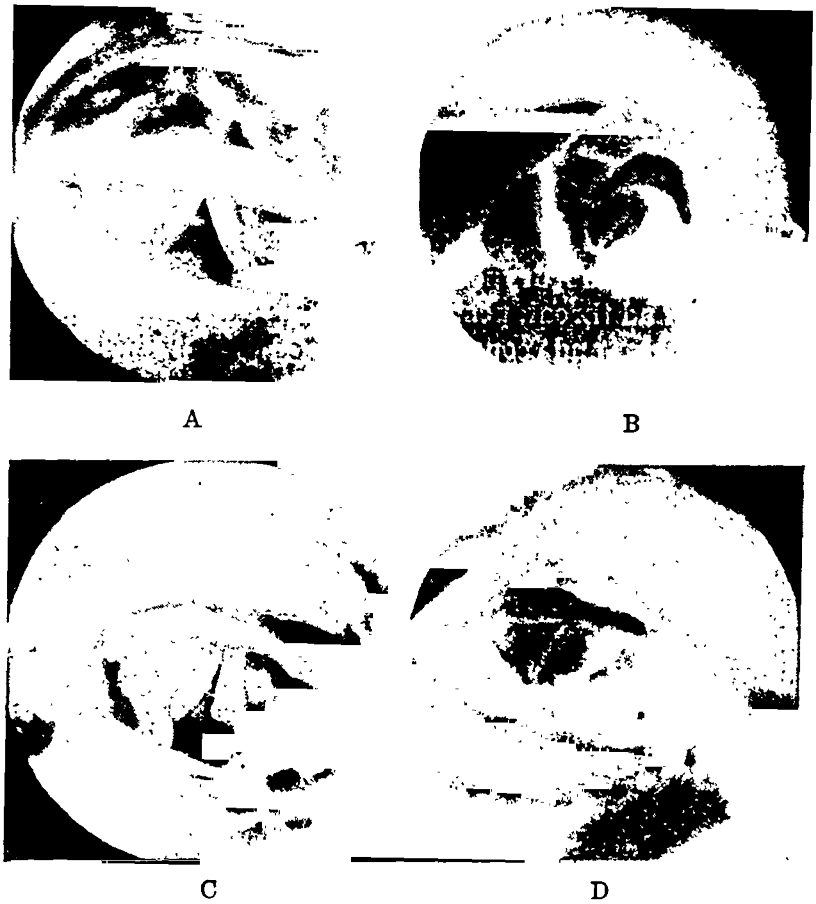

Fig. 1.—*A*, larynx of an excessive smoker (male), revealing diffuse edema of the anterior halves of both cords. *B*, polypoid degeneration of the right cord of a female nonsmoker who had used snuff for many years. *C*, larynx of heavy smoker and constant talker (male). There is polypoid degeneration of both cords, with superficial leukoplakia of the right. *D*, marked polypoid degeneration of the anterior halves of both cords in the larynx of an excessive smoker (male).

Reproduced by permission of *Laryngoscope*, 64:259-270 (April) 1954.

trophic laryngitis" and "polypoid degeneration." Chronic infection and vocal abuse were listed as the causative factors.

Since Myerson's report I have observed 14 patients with this condition. All but 1 was a heavy smoker; the 1 exception used snuff. The gross appearance was as described by Myerson. In the cases of 5 of these patients the growths were removed and examined microscopically. The histopathologic picture agreed with the foregoing description.

Removal of these growths was not advised until the patients had stopped smoking. In 1 instance this resulted in the complete disappearance of large bilateral polypoid masses, occurring gradually over a period of some weeks. In a number of the others edema and polypoid thickening lessened or disappeared when smoking was discontinued.

In a second article,[6] Myerson stated that his series had been increased to 182 patients. No other large series have been

From the Executive Director's Notebook

In several past issues of the Bulletin, reference has been made to the surgical symposium recently conducted by the International College of Surgeons in conjunction with the University of Santo Domingo. As this program falls in line with the overall educational program that the College has projected, it is my belief that the comments of the surgeons who participated in this excellent work in Santo Domingo should be given in some detail for the information of our Fellows.

On August 20, 1956, the program was inaugurated—and at that time it was my pleasure to go to Santo Domingo for the opening session. Two of our outstanding thoracic surgeons opened the scientific program, Doctor Samuel Thompson and Doctor Victor DeLuccia, both of New York. A typical week's program can be described as follows:

Monday was given over to official calls by the visiting surgeons and discussions with the President of the University and the Secretary of Health, as well as the staff of the medical school. The hospitals, four in number, are modern in every respect. These were visited and the operative program decided upon, as well as the selection of patients. These hospitals are well equipped and adequately staffed as far as medical personnel is concerned. Postgraduate opportunity for the average doctor of medicine in Santo Domingo is not available, unless by individual effort a surgeon can travel to South America, Europe or the United States. It was with this thought in mind that the President of the University of Santo Domingo, an outstanding educator, believed that much good could come from a teaching program in general surgery and the specialties.

Following visits to the University and the hospitals, the next event in the program was the open meeting held at the University for all doctors of medicine in the Islands. Lectures by the visiting surgeons, Drs. Thompson and DeLuccia, with excellent illustrations and motion pictures, were given to some three hundred guests. The President of the University spoke briefly, and your Executive Director responded for the United States.

Dr. Ross T. McIntire
F.A.C.S., F.I.C.S.

Tuesday saw the inauguration of actual surgery. The operations performed included pneumonectomies for multiple cysts of the lung, as well as for carcinoma. Operation on the heart was performed for the first time in Santo Domingo—a commissurotomy for mitral stenosis caused by rheumatic fever. This operation was performed on television, and, as there is but one television station in the Island, the audience included everyone who owned a set. This gave the average citizen an opportunity to know what could be accomplished by surgery. In a few days the patients who had undergone operations appeared on television to give assurance to the people of Santo Domingo that the operation was successful.

Dr. Thompson's comment was as follows:

"A simple description of the lectures and operation does not do justice to the symposium. The enthusiasm and earnestness of the Dominican doctors, many of whom came from great distances and at some sacrifice, to hear lectures given in a foreign language, cannot be adequately described. The intense desire of those doctors in the crowded operating amphitheater to see and learn new techn [illegible] fies description.

koplakia. The leukoplakia may be followed by carcinoma.

Assuming, then, that smoking may have harmful effects, how great is the risk? The work of Ryan and Auerbach indicates that histologic evidence of chronic inflammation is common. This is my own clinical impression, gained by routine examination of the mouth and throat. This chronic inflammation commonly causes subjective complaints—postnasal discharge, dryness and burning, hoarseness and cough. The more significant alterations—polypoid corditis, leukoplakia and carcinoma—although common, certainly do not occur in a large percentage of smokers.

Much has been written on the sharp increase in incidence of carcinoma of the lung, paralleling the increase in cigarette consumption. The incidence of laryngeal carcinoma has increased (75 per cent from 1937 to 1947) but not as much as has that of pulmonary carcinoma. Wynder[15] and workers explained this by noting that carcinoma of the larynx was common when most smokers used a pipe or cigars. The actual percentage of smokers is not appreciably different today, but most of them have changed to cigarettes, and the incidence of pulmonary carcinoma has increased.

Since the serious diseases do not occur in a high percentage of smokers, it may be argued that one is not justified in urging universal curtailment of smoking, a habit which seems to bring satisfaction to millions. There is strong evidence, however, that smoking may cause the symptoms and diseases described. When a patient complains of cough, hoarseness, burning or postnasal discharge, or presents evidence of chronic inflammation, corditis or leukoplakia, one should urge curtailment of smoking rather than rely on gargles, sprays or antibiotics. This requires a great deal of time and effort and taxes the physicians' powers of persuasion, "salesmanship" and patience. He may be rewarded by relief of the patients' subjective symptoms as well as diminution of the objective evidence of disease.

SUMMARY AND CONCLUSIONS

Laboratory studies, plus clinical experience reveal that tobacco smoke is irritating to the respiratory mucosa.

Clinical observations, confirmed by recent histopathologic studies, indicate that chronic nonspecific inflammation of the mouth, pharynx and larynx is common in persons who have smoked excessively for years.

There is clinical evidence that polypoid degeneration of the vocal cords results from irritation due to tobacco smoke.

Leukoplakia of the mouth, tongue, palate and larynx is considered the result of smoking.

Leukoplakia is a common precursor of carcinoma. A recent exhaustive survey leads to the conclusion that excessive smoking is an important factor in the causation of malignant disease of the larynx.

ZUSAMMENFASSUNG UND SCHLUSSFOLGERUNGEN

Laboratoriumsuntersuchungen und klinische Erfahrungen zeigen, dass Tabakrauch die Schleimhaut der Atmungsorgane reizt.

Durch neuere histopathologische Untersuchungen bestätigte klinische Beobachtungen weisen darauf hin, dass chronische unspezifische Entzündungen des Mundes, des Rachens und des Kehlkopfes bei Leuten, die Jahre hindurch starke Raucher waren, häufig sind.

Es ist klinisch nachgewiesen worden, dass die polypoide Entartung der Stimmbänder auf Reizung durch Tabakrauch beruht.

Die Leukoplakie des Mundes, der Zunge,

Dr. Virgilio DiazOrdáñez, Rector of the University of Santo Domingo, Dr. Gershom Thompson and Dr. Max Brodny, among others, attend a session at the opening of the week of urologic surgery.

mingo for the past fifteen years. During that time he has taught a large number of local surgeons. Consequently, there are an outstanding number of plastic surgeons in the hospitals. Dr. Maltz and Dr. Tausand performed some twenty-two difficult operations. Some of the patients I saw two months after their operations, and the results were uniformly excellent.

Dr. Tausand performed some excellent operations. Although he was unable to speak Spanish to any extent upon his first visit, he demonstrated two months later, in follow-up work, that Spanish could be learned in that short space of time. This, of course, made his service especially effective.

The fourth week was given over to obstetrics and gynecology. Because of the great volume of work in this field, it was decided to increase the number of surgeons for this particular week. Dr. Horace Ayers, who went to Santo Domingo with me for preliminary talks with the University, was in charge of this team; the three additional members were Dr. Gilbert Douglas of Birmingham, Alabama, and Drs. John Mussio and Richard Gorbea, both of New York City. Dr. Gorbea, a young doctor and a native of Puerto Rico, was of great assistance because of his knowledge of Spanish.

The maternity hospital is a four-hundred bed affair—modern in every respect—and has a continuously full load of patients. Dr. Douglas, who has visited many parts of the world, was most enthusiastic over the modern hospitals and their facilities. He was greatly impressed by the schedule of the local doctors. In his report, he said, "With what we saw in Santo Domingo and what has been suggested previously, it looks as if a similar pattern, adapted, of course, to the needs of each country, might be of great value to other Central or Latin American countries." It should be clearly understood, however, that programs would be formed only upon the request of a university in any of the American countries.

Proctologic Surgery

Mixed Cavernous and Capillary Hemangiomatosis Involving the Large Bowel

EDWARD R. McKAY, M.D., F.I.C.S., D.A.B.*
AND
HOMER H. CLARK, M.D.**
SALT LAKE CITY, UTAH

BACON[1] stated that "angioma of the anus, rectum and colon is extremely rare." This is emphazied by the paucity of reports in the literature. Lazarus and Marks[2] in 1947 summarized 20 such cases. Gentry,[3] after an exhaustive review of the vascular lesions of the entire gastrointestinal tract, found 61 benign and 9 malignant vascular lesions of the colon, rectum and anus. These 70 lesions represented 30 per cent of the total number of lesions observed in the gastrointestinal tract.

REPORT OF A CASE

E. B. was born in Holland in 1943. When he was still an infant, his mother noted red spots on the diaper. Intermittent but increasing bleeding in succeeding months led to his undergoing an abdominal operation at the age of 3, during which "something was tied off." After this operative procedure, no bleeding was noted for one and one-half years. When it started again the bleeding was fairly consistent, appearing every few weeks, three months being the longest period noted in which no bleeding occurred. Immigration to the United States in 1949 did not affect the bleeding in any way. In September 1953 two massive hemorrhages, occurring forty-eight hours apart, required hospitalization and transfusion. Operation was recommended but was refused by the mother. In November 1954 another massive hemorrhage occurred and, with the mother's consent, the boy was admitted to the hospital on November 11 for surgical treatment of the lesion.

Most of the past medical history centered around the "bad left leg," which had been present at birth (Fig. 1). A deformed foot had been amputated in Holland when the boy was 3½ years old. Operation had also been performed on both sides of the left knee and the upper part of the left leg. In March 1951 a chronic ulcer of the amputation stump had been excised and the stump revised. In March 1953, 53 radon seeds, a total of 47 millicuries, had been implanted in the left leg and thigh, without noticeable improvement. In September of the same year reamputation and revision of the left leg had been done, with excision of 10 pounds (4.5 Kg.) of subcutaneous fat.

Physical examination revealed a thin, malnourished boy who appeared one to two years younger than his stated age of 11. The positive signs included several shotty, enlarged lymph nodes in the anterior cervical chain and the submaxillary group in the neck, a 5 mm. hemangiomatous spot below the left scapula, and two elevated purple lesions 1 by 1 and 5 by 1 cm. respectively, on the upper part of the left thigh. There were enlarged, distended vessels coursing over the lower part of the abdomen; a midline abdominal scar was present; the scrotum was filled with a soft, yield-

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Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-13, 1956.

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man Clinic in Canton, and President of the staff of the Graham Hospital of the same city. He was married to Gladys Huff, of Atlanta, Illinois, in 1917. Their two children are Eleanor Irene Coleman of New York City and Louise (Coleman) Scott, wife of Senator Albert Scott of Canton, Illinois.

LEGAL ADVISERS OF THE INTERNATIONAL COLLEGE OF SURGEONS

Mr. Alvin Edelman, attorney and counselor, the newly appointed legal adviser of the International College of Surgeons, is a forty-year-old Chicagoan. He received his preliminary education in the Chicago Public Schools and then attended Northwestern University in Evanston, Illinois, graduating with the degree of a Bachelor of Science in Law. He was a member of the Northwestern University Debating Team; was elected to Pi Eta Sigma, and to Phi Beta Kappa, the honorary scholastic fraternity. He was active in Inter-Fraternity Council work.

He studied law in the Northwestern University School of Law, from which he received the degree of Bachelor of Laws. He was Associate Editor of the *Illinois Law Review*, now known as the *Northwestern Law Review*. He is the author of a number of articles on law published in different legal periodicals.

Mr. Edelman is an active member of the Chicago Bar Association, serving most recently as a member of the Committee on Inquiry and the Committee on Medical Legal Relations. He has served as President of Tau Epsilon Rho, International Law Fraternity Alumni Association, and is a Past President of the Phi Epsilon Pi Fraternity Alumni Association. He is a member of the American Bar Association.

Mr. Edelman is Past Master of Isaac Cutter Lodge No. 1073, A.F. & A.M., a thirty-second degree Mason and a member of Medinah Shrine. He is a member of the Elks, holding an Honorary Life Membership, and last spring completed his term in office as Exalted Ruler of Chicago Lodge No. 4, B.P.O. Elks.

He served in the United States Coast Guard Auxiliary as District Legal Officer for the Ninth United States Coast Guard Auxiliary District, and is presently Commander of Flotilla 22-8. He is active in a number of civic organizations, and has for several years served as Chairman of Zone 2 of the Lawyers' Division of the American National Red Cross.

Mr. Edelman is married and has three children, and is a resident of Glencoe, Illinois.

Mr. Roland Steiner, Advocate of the Geneva Bar, was recently appointed as the legal representative for the International College of Surgeons in Europe. Mr. Steiner was born in Geneva, Switzerland, on Jan. 1, 1918. His elementary and secondary education was secured in the city of his birth, where he had a scientific and classic training, graduating in 1936.

Mr. Steiner then entered the University of Geneva, where he pursued his studies in law. He earned a degree in law in 1942. He took graduate training at the University of Neuchâtel, in Switzerland, where he concentrated on the study of the economic and business sciences, in which he was awarded a degree in these subjects in 1943 and in law in 1944.

From the beginning of 1945 until the summer of 1946, he served in Paris as an official delegate of the International Red Cross Committee. Since the autumn of 1946, Mr. Steiner has been practicing law in Geneva.

Fig. 2.—Lateral roentgenogram of thoracic portion of spine and large bowel. Scalloped, irregular mucosal pattern is consistent with deformity produced by ectatic submucosal vessels.

part of the rectum by the technic described by Swenson for the treatment of congenital megacolon. In the abdominal phase comparatively little bleeding was encountered, although the lesion extended into the mesentery. Bleeding in the pelvis was controlled by packs, which were left in during the perineal phase of the operation. When these packs were removed, prior to closure of the abdomen, a profuse, persistent hemorrhage from the pelvis was encountered, and eventually it became necessary as a life-saving measure to close the abdomen with the packing left in the pelvis. This was done with considerable reluctance, as the packing caused pressure against the anastomosed bowel, which was dependent on a small marginal artery for its viability. Two days later the patient was taken back to the operating room, and these packs were removed through a transverse incision between the rectum and the coccyx. Practically no bleeding was encountered.

On the sixth postoperative day a rectoperineal fistula developed. Examination revealed a defect about the size of a silver quarter at the site of anastomosis. A colostomy in the area of the splenic flexure was utilized to divert the fecal stream until the fistulous opening healed. The colostomy was then closed. The final result was a well-functioning bowel with good elimination and good control.

Surgical Specimen.—Gross: Three lengths of large bowel were removed, the largest measuring 64 cm. in overall length. Two other, smaller segments, were respectively 5 and 6 cm. long. The longest segment of bowel was sharply angulated, and the attached fibroperitoneal tissue was decidedly congested and pre-

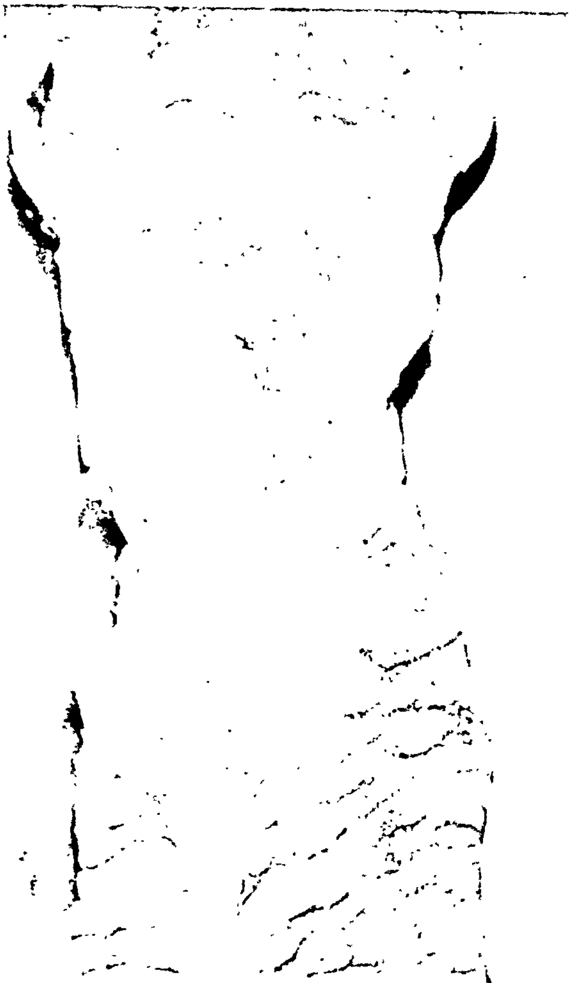

Fig. 3.—Large bowel. Note sharp transition between normal mucosal pattern and altered transverse rugae. Mucosal folds are irregular and broadened, showing focal nodularity in some instances. Mucosa suggests a darker tinctoral value.

MALPRACTICE LIABILITY INSURANCE

International College of Surgeons

In view of the many inquires that have been received for more specific information about the malpractice liability insurance, offered by the International College of Surgeons, through Lloyd's of London, we are summarizing the information that appears on the certificate of insurance.

The Underwriters at Lloyd's, London, agree subject to the provisions contained in the certificate to indemnify each member of the International College of Surgeons named on the schedule of insured persons for any and all sums which the insured person shall by law become liable to pay in respect of professional services rendered, or which should have been rendered, by the insured person or nurses or technicians employed by the insured person, or any other person (except partners, unless specifically endorsed on the certificate) resulting from any claim or suit based solely upon error, negligence or mistake committed during the period of the insurance.

The insurance also extends to cover the liability of the insured person for malpractice (as defined in the preceding paragraph) by any locum-tenens employed by the insured person to continue the practice of the insured person in his absence, provided that this insurance shall only cover malpractice committed by such locum-tenens during any one or more periods not exceeding thirty days in the aggregate during each consecutive period of twelve months commencing from the inception date of this insurance. If the insured person employs a locum-tenens for more than thirty days in the aggregate during any one annual period of insurance the protection afforded by this insurance shall be limited to the first thirty days in the aggregate during such period.

Irrespective of the number of persons named as the assured or added by endorsement under one insured person's certificate the liability of the underwriters for damages on account of malpractice shall not exceed the limit of liability stated earlier, except that, subject to the provisions contained on the certificate, the underwriters will in addition pay the costs and expenses incurred in the defense of any claim or suit.

This insurance does not cover any liability of an insured person which is insured or would, but for the existence of this insurance, be insured by any other insurance, except in respect of any excess beyond the amount which would have been payable under such other insurance had this insurance not been effected.

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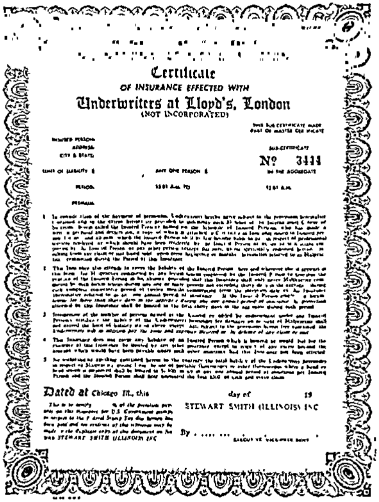
No liability shall attach to the underwriters in respect of (a) criminal acts, or services rendered while under the influence of intoxicants or drugs; (b) contact lenses, and (c) the performance of or the recommendation of any operation to produce sterility unless the insured person shall be able to establish pathologic indications for such operation.



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large bowel wall (Fig. 4) showed moderate to marked thickening due to *muscular* hypertrophy, increased vascularity, submucosal fibrosis and edema of all layers. Sections with fibroperitoneal tissue attached also showed thickening of this tissue. The mucosa was intact and showed little alteration except for a rare focal hemorrhage within tissue supporting glandular structures. In many instances relatively thick-walled vascular channels, sometimes resembling venous structures, were seen directly beneath the mucosa. In some areas these channels were arranged in close proximity, almost simulating the pattern of cavernous hemangioma. Vascular structures with much thinner walls were also encountered in haphazard distribution. Dilated lymph channels were prominent, and these were most numerous in submucosal regions. Thrombi exhibiting various degrees of organization were frequently encountered.

Attached fibrofatty peritoneal tissue also contained these greatly dilated and tortuous vascular channels. Focally, a few round cells were scattered about the peripheries of hemorrhagic areas. Organization of interstitial hemorrhage was not encountered. The endothelial lining of all vascular channels was formed by flattened cells, which presented a uniform structure and showed orderly orientation. No stratification of endothelial cells was observed, and no significant mitotic activity was present. There was no suggestion of malignant change.

Pathologic Diagnosis: The pathologic diagnosis was hemangiomatosis involving the large bowel and supporting mesenteric tissue.

Classification. — Classification of these lesions is difficult because of their extreme variability, their tendency to overlap various other types and the lack of uniformity in their location, size, histologic appearance and clinical behavior.[4]

Fraser,[5] in 1919, grouped them into capillary, compact and cavernous types.

Brown,[6] in 1923, divided them into four classes according to their reaction on the adjacent tissue:

1. Multiple tumors on vascular arcades: small red nodules in the submucosa.

2. A submucosal tumor growing toward the lumen of the intestine and tending to ulcerate the overlying mucosa.

3. A submucosal tumor that may grow to such size as either to obstruct the intestine or cause intussusception.

4. A diffuse ringlike lesion that begins in the submucosa, involves the muscularis, constricts the lumen of the intestine and causes intestinal obstruction.

Hunt[7] suggested that a fifth group be added to this classification.

5. A diffuse intramural lesion that involves the entire thickness of the bowel wall but is neither constrictive nor obstructive.

Gentry[3] classified them according to histopathologic detail, as follows:

Benign vascular lesions
- A. Telangiectasis (hereditary and nonhereditary)
- B. Hemangioma
  1. Capillary hemangioma (simplex, mostly single)
  2. Mixed capillary and cavernous hemangioma
  3. Cavernous hemangioma
     - a. Multiple phlebectasis (small cavernous)
     - b. Simple polypoid
     - c. Diffuse expansive (single contiguous)
     - d. Diffuse expansive (multiple noncontiguous)

Malignant vascular lesions
- A. Hemangioendothelioma
- B. "Benign metastasizing hemangioma"
- C. Kaposi's sarcoma

Diagnosis.—The cardinal symptom of this condition is bleeding. This may vary from the presence of occult blood in the feces to massive exsanguinating hemorrhage resulting in death. The most commonly reported pattern is that of intermittent hemorrhage, sufficient in amount and frequency to keep the patient in a state of anemia. The bleeding is frequently the thirtieth of May, there begins a meeting of the New York and Canadian Sections at White Face Inn at Lake Placid, New York, and in early July, at the Balsams at Dixville Notch, New Hampshire, there will be held the traditional mid-summer meeting of the Eastern Region under the leadership of the Regent from Massachusetts, Dr. Leopold Brodny of Boston.

Here are four pleasant breaks for the busy surgeon — guaranteed to relax the keyed up nervous system and unharden the arteries. It would give me extreme pleasure to meet you, my brother surgeon, at each of these delightful assemblies.

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Those desiring their Congress presentations to appear later as articles in the Journal of the International College of Surgeons, please note:

1. **A full copy of the manuscript, together with all illustrations, legends, tabular matter and bibliographic references, should be sent DIRECT to the** Editorial Office, Journal of the International College of Surgeons, 1516 *Lake Shore Drive, Chicago 10, Illinois. Manuscripts so submitted will be* promptly acknowledged and, on acceptance by the Editorial Board, published *as soon after the Congress as possible.* The Journal **cannot be held responsible for loss, failure of acknowledgment, delay in publication or nonpublication of any manuscript, or any subsidiary material appertaining thereto, which has not been submitted through the official editorial channels.**

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technic been utilized—for example, the procedure described by Babcock[14] or the pull-through technic of Bacon would have yielded readier access to the bleeding pelvic vessels; and, if packing were necessary, the packs could have been removed without subjecting the patient to an additional operation.

SUMMARY

The classification, diagnosis and treatment of hemangiomatosis of the colon and rectum are reviewed. A case of mixed cavernous and capillary hemangiomatosis of the colon, sigmoid and rectum, coexistent with similar lesions of other parts of the body, is reported. The surgical approach in the aforementioned case is outlined. It consisted of hemicolectomy and abdominoperineal proctosigmoidectomy with anastomosis of the transverse portion of the colon and the lower part of the rectum according to the Swenson technic.

RIASSUNTO

Viene passata in rassegna la classificazione, la diagnosi e la cura dell'emangiomatosi del colon e del retto. Viene descritta un'osservazione di cavernoma e angiomatosi capillare misti del colon e del retto coesistenti con lesioni consimili di altre parti del corpo. Viene tratteggiata la tecnica chirurgica da seguire nei casi sopramenzionati consistente in una emicolectomia e in una proctosigmoidectomia addominoperineale seguita da trasversorettostomia secondo la tecnica di Swanson.

SUMARIO

A classificação, diagnóstico e tratamento da hemangiomatose do colo e reto sao revistos pelo A.—Um caso de hemangiomatose mixta- cavernosa e capilar- é apresentado em coexistencia de lesões semelhantes em outras partes do corpo. O A. descere a via de acesso a esse caso e cita a hemicolectomia com protosigmoidectomia abdomino-perineal seguida de anastomose da porção transversa do colo e a porção distal do reto, de acordo com a técnica de Swenson.

RESUMEN

La clasificación, diagnóstico y tratamiento de la hemangiomatosis del colon y recto se han revisado. Un caso de hemangiomatosis cavernosa y capilar, del colon y recto, coexistentes con lesiones similares de otras partes del cuerpo, se describió. Se mencionó el criterio quirúrgico seguido en dicho caso. Consistió en hemicolectomía y proctosigmoidectomía abdominoperineal con anastomosis de la porción transversa del colon y la parte inferior del recto, de acuerdo con la técnica de Swenson.

ZUSAMMENFASSUNG

Es wird ein Überblick über die Klassifizierung, die Diagnostik und die Behandlung der Hämangiomatose des Dickdarms und des Mastdarms gegeben. Ein Fall von gemischter kavernöser und kapillärer Hämangiomatose des Dickdarms und Mastdarms bei gleichzeitigem Bestehen ähnlicher Veränderungen in anderen Körperteilen wird beschrieben und der chirurgische Vorgang umrissen. Die Behandlung bestand in Hemikolektomie und abdominoperinealer Proktosigmoidektomie und Anastomisierung des Querdarms mit dem unteren Abschnitt des Mastdarms nach dem von Swenson angegebenen Verfahren.

RÉSUMÉ

La classification, le diagnostic et le traitement de l'hémangiomatose du colon

Left to right: Dr. A. N. Goldsmith (seated), Dr. McIntire, and Dr. Simon, who is presenting Dr. McIntire with a Christmas gift.

3:00-3:45 P.M.—Panel—PROBLEMS IN OBSTETRICS AND GYNECOLOGY

Moderator: Martin L. Stone, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
William C. Gillick, M.D., F.A.C.S., F.I.C.S., Niagara Falls, N. Y.
Edward Kahn, M.D., F.I.C.S., Queens Village, N. Y.
R. M. H. Power, M.D., F.A.C.S., F.I.C.S., Montreal, Canada
John F. Rogers, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.
Joseph F. Rooney, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
George J. Strean, M.D., F.A.C.S., F.I.C.S., Montreal, Canada

3:45-4:30 P.M.—Panel—DIFFICULT FRACTURE PROBLEMS

Moderator: Henry Milch, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Otto C. Hudson, M.D., F.A.C.S., F.I.C.S., Hempstead, N. Y.
Herbert A. Laage, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Joseph E. Milgram, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Anthony J. Pisani, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Saul Ritchie, M.D., F.A.C.S., F.I.C.S., Kingston, N. Y.

4:30-4:40 P.M.—INTERMISSION

4:40-5:10 P.M.—Paper—SURGICAL TREATMENT OF UTERINE AND VAGINAL PROLAPSE (with colored film)
Charles Thom, M.D., F.A.C.S., F.I.C.S., Staten Island, N. Y.
Discussion: Victor A. Bacile, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.

SATURDAY, JUNE 1, 1957

Morning Session

Presiding: Joseph F. Rooney, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Secretaries: Benjamin Lipton, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.
Ch[illegible] .S., [illegible] Hos-[illegible]

8:00-8:30 A.M.—SURGICAL EXPLORATION FOR OBSCURE MASSIVE UPPER GASTROINTESTINAL HEMORRHAGE *(colored film)*
J. E. Dunphy, M.D., F.A.C.S., Boston, Mass.,

Recurrent Pilonidal Disease, a Misnomer

Its Management and Treatment

MARK M. MARKS, M.D., F.I.C.S., D.A.B.P.

KANSAS CITY, MISSOURI

CONTINUED symptoms of pilonidal disease in patients who had been treated by excision procedures are unlikely to be caused by reformation of encysted epithelium. Ectodermal components are rarely found in the tissue removed at subsequent operations. The pathologists describe a fibrous cavity lined with pyogenic granulations. This supposed recurrence may present itself as a single sinus leading beneath a scar or as a dehiscence in the intragluteal fold where previous surgery had been done (Fig. 1).

To determine the reason for continued symptoms following excision of the disease-bearing area, one must understand the function of the natal fold. The buttocks cushion the weight of the body on sitting and move independently and together. The natal fold then flattens, affording greater mobility to the buttocks (Fig. 2 *top*). When the natal fold is deformed by scarring, the surrounding tissue can be sufficiently restricted to cause tearing of the healed or healing wound under the least trauma (Fig. 2 *bottom*). Subsequent contamination by coliform and cutaneous bacteria causes an indolent sinus or an abscess to form that can, in every respect, mimic the symptoms of the squamous cell-lined cyst or sinus that originally existed. Repeated excisions in the area increase the deformity by further loss of tissue and more scarring that lessens the possibility of permanent healing.

Typical case histories of these so-called recurrences of pilonidal disease and their treatment are here presented.

REPORT OF CASES

CASE 1.—E. B., a 17-year-old boy, was seen because of persistent draining sinus in a scar over the sacrum. He had undergone three excisions for pilonidal disease during the past two years. The natal fold was badly deformed by scar. The upper part was keloidal and firmly bound the buttocks together. The lower half of the scar was divided by a granulating wound. After incision of the constricted area to permit adequate movement of the buttocks, the entire area healed rapidly and has remained well. The patient was hospitalized for twenty-four hours.

CASE 2.—G. S., aged 15, had had a pilonidal sinus removed two and a half years earlier, since which time he had undergone four additional excisions for what was presumed to be re-formation of the sinus. Roentgen studies of the sacrum had recently been made because of failure to heal and the possibility of spina bifida. There was no defect in the bone. Examination showed a broad scar extending from the midsacrum downward to within 1 inch (2.5 cm.) of the anal orifice. The natal fold was completely absent, and a sinus at the lower terminus of the scar admitted a probe that could easily be passed into several lateral openings. When the sinuses were incised, releasing the buttocks, a cavity filled with granulations was exposed. Simply wiping the cavity clean, using a bland ointment and bathing the parts frequently, will bring about healing with a mobile scar within a month. The patient was hospitalized for two days. At the time of writing he has remained symptom free for three years.

CASE 3.—Mrs. C. L., aged 26, had undergone an operation a year earlier for a discharging pilonidal sinus. After the wound healed, constant drainage persisted. The scar over the sacrum was 4 inches (10 cm.) long, and the

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patient had been operated upon seven times for what was presumed to be recurrence of the original disease.

COMMENT

Although much has been written concerning the treatment of pilonidal disease, virtually nothing is published about the complications that can follow such treatment.[1] Excision in or about the intragluteal cleft entails the removal of normal as well as abnormal tissue. The defect that results eventuates in some deformity of the natal crease, with some limitation of the movements of the buttocks. The wound may heal with firm scarring only to break down later or even to remain partially healed with a trough full of pyogenic granulations.

The lessons of the last major war proved that incision and marsupialization or eventration of the invaginated ectoderm of a pilonidal cyst or sinus were far superior to any excision method for eradication of the disease. The advantages of incision procedures meant far less loss of time and minimal discomfort.

For the past sixteen years many followed this simple method of treating pilonidal disease with satisfactory results. We have taught that excision operations for this entity, regardless of the method, are usually needless and wasteful.[2] The sacral or post anal sinus is a congenital or acquired nonsymptomatic secretory sacculation of skin and becomes symptomatic only because of the lack of drainage. Exteriorization of the sac membrane should permanently prevent further difficulties because reencystation is then impossible. This we have found to be true.

CONCLUSION

The "recurrence" of pilonidal disease following excision of the area containing it is a complication of the original operation, not a re-formation. Fracture of the scar is impossible because of the limited movement of the buttocks bound by excess scar and loss of part of the natal crease. Infection in the scar causes formation of a draining sinus that mimics the original lesion. The sacrifice of more tissue worsens the chance for healing. Correction can be accomplished by freeing the buttocks and re-forming the intragluteal cleft. A proved method of treatment for the initial condition is discussed. This method assures rapid healing, a minimal stay in the hospital and greater freedom from further complications.

CONCLUSIONS

La "récidive" du kyste pileux (sinus coccygeal) après excision est une complication opératoire et non une néoformation pileuse. Une déchirure cicatricielle peut set produire du fait de la limitation des mouvements fessiers due à une prolifération cicatricielle. L'infection de la cicatrice provoque la formation d'un sinus imitant la lésion. L'ablation d'une plus grande partie de tissus diminue encore les chances de guérison. L'auteur décrit une technique correctrice et une méthode de traitement qui a fait ses preuves. Elle assure une guérison rapide, un séjour minimum à l'hôpital, et diminue les risques de complications.

CONCLUSAO

A recidiva que se segue a exére do cisto dermoide não significa neoformação do cisto mas apenas uma complicação. A ulceração da cicatriz é devida a escasses de tecido criada pela operação e pela perda da prega interglutea. A infecção leva a formação de fístula que se mostra semelhante a lesão original. A remoção de maior parte de tecireduz as possibilidades de cicatriza-

Surgical Management of Draining Nipple ....12:20-12:40 p.m.
George N. Bates, M.D., F.A.C.S., F.I.C.S., D.A.B., Active Surgical Staff, St. Vincent, St. Charles and Maumee Valley Hospitals; Courtesy Surgical Staff, Mercy and Toledo Hospitals, Toledo, Ohio

Incubation Period in Bronchogenic Carcinoma ....12:40-1:00 p.m.
Edward C. Lawless, M.D., Columbus, Ohio

Wednesday, April 10, 1957

Presiding:
J. Duane Miller, M.D., F.A.C.S., F.I.C.S., D.A B., Regent of Michigan, Grand Rapids, Michigan.

Secretary:
Gilman D. Kirk, M.D., F.A.C.S., F.I.C.S., D.A.B., Regent of Ohio, Columbus, Ohio

Tumors of the Neck..........9:00-9:20 a.m.
Arnold S. Jackson, M.D., F.A.C.S., F.I.C.S., D.A.B., Director, Jackson Clinic, Madison, Wisconsin

Management of Subcapital Fractures of the Hip by Transfixion...... ..9:20-9:40 a.m.
Frederick James Krueger, M.D., F.A.C.S., F.I.C.S., D.A.B., Assistant Clinical Professor, Orthopedic Surgery, Marquette University, Milwaukee, Wisconsin

Benign Neoplasms of the Stomach ....9:40-10:00 a.m.
Edmund W. Schacht, M.D., F.A.C.S., F.I.C.S., Chairman, Surgical Service, St. Luke's Hospital, Racine, Wisconsin

Fractures of the Ankle....10:00-10:20 a.m.
George J. Garceau, M.D., F.I.C.S., D.A.B., Professor and Chairman, Department of Orthopedic Surgery, Indiana University Medical School, Indianapolis, Indiana

A Method of Surgical Treatment of Urethral Stricture Not Amenable to Dilatation ....10:20-10:40 a.m.
Avrom M. Isaacs, M.D., F.A.C.S., D.A.B., Clinical Instructor of Surgery, Department of Urology, University of Louisville School of Medicine, Louisville, Kentucky

Intermission ....10:40-11:00 a.m.

Panel

Thyroid Diseases ....11:00-12:00 M.
Moderator: Arnold S. Jackson, M.D., F.A.C.S., F.I.C.S., D.A.B., Director, Jackson Clinic, Madison, Wisconsin
William O. Johnson, M.D., F.A.C.S., D.A.B., Professor of Gynecology and Head of the Combined Departments of Gynecology and Obstetrics, University of Louisville School of Medicine, Louisville, Kentucky
Claude J. Hunt, M.D., F.A.C.S., F.I.C.S., D.A.B., Former Chairman, Research and Kansas City Municipal Hospitals; Surgeon, Research Hospital, St. Mary's Hospital, Menorah Hospital, Surgical Section Research Clinic; Chairman of Trustees, United States Section, International College of Surgeons, Kansas City, Missouri
Lindon Seed, M.D., F.I.C.S., D.A.B., Clinical Associate Professor of Surgery, University of Illinois College of Medicine; Surgical Staff and Director of Isotope Laboratories, Augustana Hospital, Chicago, Illinois

The Complications of Cataract Surgery and Their Management..12:00-12:20 p.m.
Richard C. Troutman, M.D., F.A.C.S., D.A.B., Professor of Ophthalmology, Department of Surgery, State University of New York, Brooklyn, New York

Menstruation: Its Physiology and Abnormalities ....12:20-12:40 p.m.
Gilbert F. Douglas, M.D., F.A.C.S., F.I.C.S., D.A.B., Associate Professor of Gynecology, Department of Gynecology, Medical College of Alabama, Birmingham, Alabama

Surgical Treatment of Inguinal Hernia, with Particular Reference to Recurrences ....12:40-1:00 p.m.
W. M. McMillan, M.D., F.A.C.S., F.I.C.S., D.A.B., Professor of Surgery, Cook County Graduate School; Assistant Professor of Surgery, Northwestern University, Chicago, Illinois

The General Chairmen of the Woman's Auxiliary for the French Lick meeting are Mrs. Arnold S. Jackson, Madison, Wisconsin; Mrs. Leon Gray, Martinsville, Indiana, and Mrs. Elbert L. Dennis and Mrs. Karl Winter, Louisville, Kentucky. The Co-Chairmen are Mrs. Ben A. Reid, Mrs. J. Andrew Bowen and Mrs. Joseph C. Ray, Louisville, Kentucky; Mrs. Paul Haley, South Bend, Indiana, and Mrs. George Garceau, Mrs. Phillip Holland, Mrs. Eugene Newland and Mrs. Simon Reisler, Indianapolis, Indiana.

A cordial invitation is extended to members of the surgical and allied professions, their families and guests to attend.

Advance registration Sunday, April 7 in the Lobby from 10:00 a.m. to 12:00 noon and from 2:00 p.m. to 4:00 p.m. Registration fee $5.00 for members and visiting physicians. No charge for residents, interns, nurses and the Military.

Women's registration in the Lobby. Fee $5.00.

Exteriorization for Pilonidal Disease

VALENTINE R. MANNING JR., M.D., F.I.C.S.

PHILADELPHIA, PENNSYLVANIA

THE operations most commonly employed for pilonidal disease entail total excision of the lesion. By total excision is meant removal not only of the membrane lining the cyst and sinuses but that of the surrounding fibrous tissue and a varying amount of the overlying skin as well. The resulting wound, often a large one, is then either closed by suture or allowed to remain open to heal by granulation. If one considers overall figures, primary closure is followed by a relatively high rate of recurrence, whereas total excision without closure often results in a prolonged period of healing. Total excision by either method sometimes results in a scar that gives rise to discomfort.[1]

For a successful primary closure, total excision is a necessary aim. The outer limits of the fibrous tissue afford the surgeon a convenient plane of dissection. He must cut beyond the borders of the actual cyst and sinuses in order to include them in the tissue excised. He must try to remove all the cyst and sinuses, not because retained epithelium will of itself form a new cyst but because infected tissue may otherwise be locked within the closed wound.[2]

Similarly, after an operation by the open method of total excision, lack of proper drainage of infected areas may result in delayed healing or recurrence.

If the surgeon is content to deal with an open wound after operation, the question arises whether total excision is necessary. Certainly localized subcutaneous infections in many other sites are usually cured by adequate drainage alone.

To drain a pilonidal lesion adequately, with hope of effecting cure, the surgeon must, at the least, incise the entire roof of the cyst and sinuses, thus exposing the inner walls of the cavity to the exterior. This has been termed "exteriorization."[3]

The principle is not new, nor do its present proponents claim originality. In 1867, Warren[4] advocated as one form of curative treatment "laying freely open the cavity or cavities." For many years, however, the method was neglected.

In 1933, Cutler and Zollinger[5] reported the use of exteriorizing incisions followed by the application of a sclerosing solution to the lining of the cavity. Buie, in 1937, described a method he named "marsupialization" in which he incised the overlying tissue, excised the roof and lateral walls and sutured the membrane of the floor of the cavity to the margins of the skin. Nesselrod[6] used the same method. Bacon[7] used marsupialization approximately four days after incision and drainage of acute pilonidal abscesses. Granet,[8] in 1945, advocated unroofing, as did Brust and Sarner.[9] Marks,[10] in 1947, reported 618 cases in which he used exteriorizing incisions, suture of the membrane to the skin, and application of a sclerosing solution to the membrane without excision of any tissue; he termed this procedure "eventration." In 1946, Zimmerman[11] described what is probably the most conservative type of definitive operation for this disease; he incised the roof in its entire extent but did not excise any tissue, nor did he use any

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From the Departments of Proctology, Nazareth Hospital, Philadelphia, and St. Joseph's Hospital, Philadelphia.

Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. [illegible], [illegible].

Submitted for publication Sept. 27, [illegible].

Woman's Auxiliary

United States and Canadian Sections, International College of Surgeons

REPORT OF PROGRESS

Mrs. Clifton L. Dance

Our committees have been diligently at work since the last meeting of the Board of Directors, and I take this opportunity to acquaint you with the personnel and work of our committees and our officers.

Ladies' Entertainment Committee, Mrs. Clement L. Martin, Chairman.—Mrs. Martin is already at work, planning the entertainment for the next annual Congress. In a great metropolis like Chicago, plans and reservations must be made far in advance. With Mrs. Martin at the helm, we may be sure of delightful surprises.

Constitution and By-Laws Committee, Mrs. DeLoise H. Downey, Chairman.—Mrs. Downey, who is richly endowed for this task, reports good progress. The work requires vision to see ahead for the steady growth of the Auxiliary and a balanced judgment for the practical. Each point must be considered and then reconsidered from a point of law.

Historian, Mrs. Henry W. Meyerding.—Mrs. Meyerding is particularly well qualified for the important post of recording for posterity. She is a charter member of the Woman's Auxiliary. Her husband is a past president of the United States Section of the International College of Surgeons, and both are conversant with every important event in the history of the College.

Membership Committee, Mrs. Floyd E. Keir, Chairman.—This is a year-round job, and we are fortunate in having for our chairman Mrs. Keir, who attends a good many of the Regional Meetings and often acts as our Representative at Large.

Memorial Fund Committee, Mrs. Donald L. Dickerson, Chairman.—Mrs. Dickerson is also a charter member and is a constant, devoted worker for the Memorial Fund among her many other activities.

Public Relations, Mrs. Charles W. Weigel.—This is a post that requires a dash of imagination, as our Auxiliary is still in its infancy. We are, however, growing fast, and this growth will furnish really worth-while material in due time.

Printing Committee, Mrs. Jerome J. Moses, Chairman.—Mrs. Moses has the double duty of placing orders for all printed matter and then seeing that the proper committees and officers are supplied with the printed matter they need.

Hall of Fame and School of the History of Surgery, Mrs. Chester W. Trowbridge, Chairman.—This is a comparatively new committee, appointed with the advent of the School of the History of Surgery. This school, unique in the annals of surgery, is located in the International Surgeons' Hall of Fame and offers a series of lectures by outstanding authorities and scholars in surgical history. Mrs. Trowbridge and her committee serve as hostesses at these lectures, and as might have been expected of such a genuinely hospitable person, Mrs. Trowbridge has come up with a set of recommendations to make the lectures more accessible and comfortable for the audience.

Archives Committee.—This committee is in the process of being set up. A chairman and cabinet will be appointed.

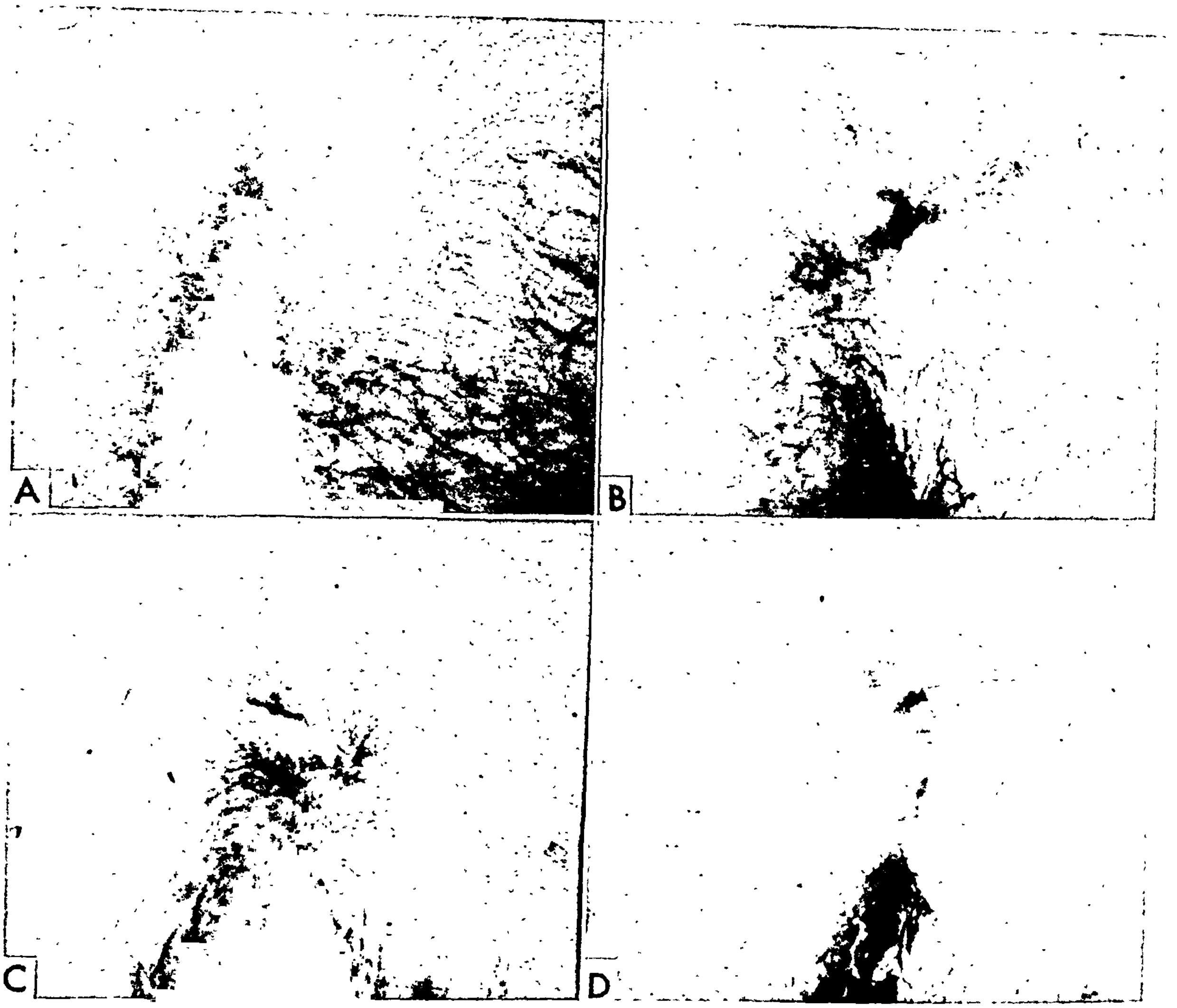

Fig. 2.—Operative scars.

incised in its entire length. If more than one external sinus opening is present, similar procedures are carried out. The walls of the cavity are wiped with gauze to remove hair and inflammatory exudate. If the cavity extends beneath the wound margins, the overhanging margin is elevated in order to complete this part of the procedure. Careful inspection will often reveal a bit of necrotic tissue adhering to the wall; such an area on probing may reveal a sinus extending outward from the cavity. In this case the tissue overlying the probe should be incised. The area around the incision is palpated to detect induration; this may also be a clue to the presence of another sinus. The entire cyst and all sinuses should now have been exteriorized. The cavity is packed loosely, and a pressure dressing is applied. The operation usually lasts fifteen to twenty minutes.

The packing is removed on the day after the operation, and no further packing is inserted. Hot sitz baths are begun. The patient is discharged on the second day after the operation. Disability is minimal.

The patient is seen twice weekly in the office until healing is well established, and then at longer intervals. At each visit the wound is carefully inspected for "bridging" and for the presence of any sinus that

3:00 p.m. *The Nailing of Fractures of the Lower Extremities*
Prof. Max Herzog, Krefeld
3:30 p.m. *The Osteosynthesis of Fractures*
Prof. Charles Mirallié, Nantes
4:00 p.m. Discussion of the reports presented.
4:30 p.m. *Infiltration Anesthesia and Operative Section of the Pudendal Nerve for Pelvic Pain*
Prof. Raymond Darget, Bordeaux
5:00 p.m. Motion picture on the treatment of fractures (in color).
7:30 p.m. Official reception and banquet.

Sunday, April 7

9:45 a.m. *Electrolytes: General Considerations*
Prof. Hamburger, Paris
10:15 a.m. *Postoperative Thrombosis and Embolism: Personal Conceptions*
Dr. Marc Iselin, Paris
10:45 a.m. *Personal Researches on Thrombosis*
Drs. J. Stalport and Edouard E. M. Nicolas, Huy
11:30 a.m. *Emergency Embolectomy of the Lower Extremity: Report of Three Cases*
Dr. G. Lambert, Seraing

COLOMBIAN SECTION

From Dr. **Antonio Ordóñez Plaja**, F.I.C.S., Secretary of the Colombian Section of the International College of Surgeons, comes the news that the Colombian Section, following the example of the College, has sent the sum of $1,000 to the Comite Pro-Hungria as a gift from the Section. The gift was granted at the Club Medico of Bogota on Dec. 24, 1956.

"We count it the greatest satisfaction,"

Left to right, Dr. Giuseppe Figlioli; Prof. Dr. César A. Pantoja, F.I.C.S., Member of the Executive Council, Colombian Section, and of the International Board of Governors; Prof. Dr. Pedro Eliseo Cruz, F.I.C.S., President of the Colombian Section and of the Colombian Association of Surgeons; Sra. de Rosemberg of the Comité Pro-Húngaros Libres, and Dr. Antonio Ordóñez Plaja, F.I.C.S., Secretary of the Colombian Section.

SUMARIO E CONCLUSOES

O A. faz uma revisão racional e historica da técnica de excisão e cicatrização secundária dos cistos dermoides de localização sacro-coccigeana.

Uma pequena serie de casos em que os cistos foram tratados pelo método conservador é citada pelo A.

O A. acha que o método de exteriosização tem valor pelo menos nos casos em que não tenha sido realizada uma operação definitiva previamente.

O A. não tenta diminuir o valor da excisão total porém cita as indicações exatas de cada tipo como motivo de uma investigação mais ampla no futuro.

CONCLUSIONI RIASSUNTIVE

Vengono brevemente passati in rassegna i principi e i fondamenti storici e la tecnica dell'operazione di esteriorizzazione per la cura delle cisti coccigee. Viene presentata una piccola serie di casi in cui tale malattia è stata curata con la semplice tecnica summenzionata. Secondo gli autori tale tecnica è utile almeno nei casi in cui non siano già stati fatti interventi. L'autore, peraltro, non vuole diminuire il valore dell'operazione radicale. Le indicazioni precise dei due tipi di intervento potranno essere stabilite in futuro attraverso ulteriori studi.

ZUSAMMENFASSUNG UND SCHLUSSFOLGERUNGEN

Die der Verlagerungsoperation bei pilonidaler Erkrankung zugrunde liegenden Überlegungen. die geschichtlichen Hintergründe und die Technik des Eingriffs werden kurz dargestellt.

Es wird über eine kleine Serie von Fällen berichtet, bei denen die Erkrankung mit einer einfachen konservativen Verlagerungsoperation behandelt wurde.

Der Verfasser ist der Meinung, dass das Verlagerungsverfahren zum mindesten in Fällen, die nicht schon früher einer grösseren Operation unterzogen wurden, von Wert ist.

Der Verfasser versucht nicht, den Wert der totalen Resektion herabzusetzen. Die genauen Indikationen für die einzelnen Operationsformen müssen durch weitere Untersuchungen abgegrenzt werden.

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Mar. 15—*Anorectal Abscesses and Fistulas*
Dr. Lino Torre
Malignant Tumors of the Rectosigmoid: Diagnosis and Operative Treatment
Dr. J. Soler-Roig

Mar. 18—*Modern Concepts of Hepatic Anatomy: Indications and Technic of Hepatectomy*
Dr. A. Sitges

Mar. 20—*Surgical Treatment of Hydatid Cyst of the Liver*
Dr. Canals Maynor
Benign and Malignant Tumors of the Liver
Dr. F. Vilardell

Mar. 22—*General Physiopathology of the Portal System: Methods of Investigation (Splenoportographic, Portographic and Manometric)*
Drs. A. Modolell and A. Sitges

Mar. 25—*Syndrome of Portal Hypertension: Clinical Types*
Dr. Lino Torre

Mar. 27—*Surgical Treatment of Portal Hypertension: Emergency Methods for Hemorrhage Due to Esophageal Varices: Indications for Splenectomy and Various Technics of "Shunt"*
Drs. A. Sitges and Lino Torre

Mar. 29—*Surgical Anatomy of the Spleen: Operative Approaches and Technic of Splenectomy: Diagnosis and Treatment of Splenic Trauma*
Dr. Lino Torre
Indications for Surgical Treatment of Hypersplenism
Dr. J. M. Alcover

April 3—*Primary and Parasitic Cysts of the Spleen: Benign and Malignant Splenic Tumors*
Dr. A. Moliner
Anatomic Review: Approaches and Technics for Pancreatectomy: Embryologic Considerations and Principal Congenital Anomalies
Dr. A. Sitges

April 5—*Acute Pancreatitis: Pathogenesis, Diagnosis and Treatment*
Dr. Lino Torre

April 8—*Chronic Recurrent Pancreatitis: Definition, Diagnosis and Treatment*
Dr. A. Sitges

April 10—*Traumatic Lesions, Fistulas and Lithiasis of the Pancreas*
Dr. A. Moliner
Cysts and Pseudocysts of the Pancreas
Dr. M. Miserachs

April 12—*Benign and Malignant Tumors of the Pancreas, and Duodenum: Radical and Palliative Operations for Carcinoma in This Region*
Dr. J. Soler-Roig

April 24—*Acute Peritonitis: Pathologic Physiology, Clinical Forms and Treatment in General*
Dr. Lino Torre
Tuberculous Peritonitis
Dr. I. Serés

April 26—*Nonspecific Mesenteric Lymphadenitis and Tuberculosis*
Dr. A. Moliner
Retractile Mesenteritis: Cysts and Tumors of the Mesentery: Epiploic Pathology (Epiploitis, Torsion, Idiopathic Infarct and Tumors)
Dr. A. Sitges

April 29—*Acute Abdominal Disease: Concept and General Considerations: Criteria and Opportunity for Operation*
Dr. J. Soler-Roig

May 3—*Structural Scheme of the Abdominal Walls with their Orifices and Trajectories: Technic of Laparotomy: Prophylaxis and Treatment of Eventration and Evisceration Following Laparotomy*
Dr. Lino Torre
Abdominal Syndromes of Vascular Origin
Dr. R. E. de Sobregrau

May 6—*Abdominal Contusion: Abdominal and Abdominothoracic Injuries*
Dr. P. Arqué
Postoperative Treatment in Abdominal Surgery
Dr. J. Reventos

May 8—*Inguinoscrotal and Crural Hernia*
Dr. J. Montaner

May 10—*Omphalocele: Umbilical and Epigastric Hernias*
Dr. R. Balcells
Strangulated Hernia: Types and Surgical Treatment
Dr. J. Montaner

The wide scope of this program and the well-known ability of the lecturers are consonant with the quality of the service offered the College by Prof. Soler-Roig. We are sure that those who are able to take advantage of this fine course will long remember it as a unique scientific experience.

Elle est constatée souvent chez l'enfant où on ne peut invoquer un état inflammatoire ancien avec hyper kératose consécutive. Elle donne lieu parfois à cet âge à une dissémination vers la base de la langue qui contraint à une exérèse de l'amygdale, considérée, judicieusement semble-t-il, comme le foyer initial et dont l'ablation favorise la guérison.

On a observé aussi la propagation de clous mycosiques aux voies aériennes et digestives supérieures. Wright en a décrit sur le cornet inférieur, Wolff dans le nasopharynx, Dubler dans le larynx, le pharynx et l'oesophage.

Sans doute peut-on admettre qu'une muqueuse du type respiratoire peut subir par inflammation ou dystrophie une métaplasie, mais la multiplication en foyers disséminés, de productions mycosiques donne plus de vraisemblance à une colonisation mycélienne. C'était l'opinion émise par Heryng, qui en 1884, parlait de mycose leptothrixique, à propos de localisations trachéales. Elles avaient été également signalées par Sichshorst et Spiess.

En 1932 David (de Galatz), (Revue de Laryngologie p. 339) rapporte l'observation très détaillée d'un jeune homme de 18 ans, qui était venu le consulter pour crachats hémoptosïques. On le crut atteint de tuberculose pulmonaire en raison de la toux et de fièvre élevée.

Sur le pôle inférieur de l'amygdale gauche on apercevait 4 à 5 points mycosiques.

La trachéoscopie fit découvrir sur une muqueuse rouge une série de points blancs, saillants et nâcrés, très denses surtout, sur la paroi antérieure. L'examen des prélèvements montra un épithélium pavimenteux stratifié avec kératinisation de la couche superficielle: flore microbienne abondante en bacilles de Gram positif d'aspect diphtéroïde.

Le raclage des points blancs du pharynx avait donné des pseudo-diphtériques et des Leptothrix.

Une trachéoscopie ultérieure avait permis de retrouver dans le mucus des cultures pures de Leptothrix.

Le traitement instauré: Iode, argent, bismuth, avait entrainé la diminution progressive des touffes mycosiques; mais il semble que ce fut surtout la Roentgenthérapie qui réalisa le nettoyage de la muqueuse, jusque-là infiltrée et tapissée de points blancs au point qu'on né distinguait pas les anneaux de la trachée.

La guérison clinique complète fut obtenue. David considère ce cas comme un exemple de mycose leptotrixique à localisation trachéale.

Relatant au début de sa publication les réserves exprimées sur le rôle des éléments mycéliens, il termine en considérant que peut-être le Leptothrix n'est qu'un envahisseur, secondaire sur une muqueuse irritée par une inflammation chronique.

La kératose serait favorisée par un terrain prédisposé. En résumé, trois facteurs s'associeraient pour constituer la mycose: le terrain, un foyer infectieux local, le Leptothrix.

Si la part que joue le Leptothrix dans la dégérescence de l'épithélium est incertaine, sa présence au niveau des productions kératosiques n'est pas douteuse et elle est assez fréquemment observée pour peu qu'on se donne la peine de la rechercher.

Je l'ai observée personnellement dans 3 cas récents dont je vais relater brièvement l'histoire.

Un enfant de 11 ans, fils de médecin, qui jusque-là n'avait présenté aucun accident pharyngé, a vu apparaitre, en cours d'hiver 1954, à la surface de ses amygdales une série de touffes blanc-jaunâtre implantées dans ses cryptes. Une intervention fut décidée pour la fin de l'année scolaire, pour ne pas interrompre les études. Mais la

IN MEMORIAM

ERNEST NOVAK, M.D., F.I.C.S.

1899-1956

Since 1952, when Dr. Ernest Novak became a Fellow of the International College of Surgeons, his real and vital personality has emerged little by little from his many letters. The concept of him as a person casts unreality on the news of his untimely death in West Pakistan on Oct. 18, 1956. The events of his life symbolize the unsettled state of our world, and it is fitting for us to review them in remembering him.

He was born in Kolozsvár, Hungary, on May 15, 1899, and completed his preliminary schooling in the city of his birth. As an extremely young commissioned officer, he saw active service in World War I. After his term of military duty, he began his medical studies at the Medical College of the University of Budapest, where he earned his degree of Doctor of Medicine in 1924.

Between the two world wars, as he related in his letters, he had the good fortune of working for a long period in the clinics of many leading surgeons. His teacher, the ingenious Prof. Verebélyi, sent him for further surgical training to Vienna and Germany. For several years he also studied in the clinics of Gosset, Voronoff and Hartmann in Paris and with Donati in Milan. When Kolozsvár, the capital of Transylvania, once more became part of Hungary, he was named Professor of Operative Surgery.

For eighteen years Dr. Novak worked as a surgeon and teacher of surgery in his native land, contributing nearly a hundred scientific papers to Hungarian and German professional journals and writing six books on various surgical topics.

During World War II he was again drawn into military service. He was surgical advisor to the Hungarian Army and President of its Medical Council. Referring to this period in one of his letters, Dr. Novak said, "We in the army experienced but little from the Nazi regime; we fought against communism and knew why; when the battle for Hungary was lost, we retreated to Germany; the collapse reached me in Halle. . . ."

As a stateless person whose country had collaborated with the Nazis, he was not entitled even to those benefits that were accorded to displaced persons. In the aftermath of war he was assigned to work in a large hospital for displaced persons, serving as Chief Surgeon of the hospital. Three years after the end of the war, he was able to secure a visitor's visa for a short stay in Ireland. Immigration regulations, however, made it impossible for him to make any permanent plans either in Ireland or in England.

He neither wished nor thought it wise to attempt to return to Hungary, which, as he put it, was laboring under a continuation of its thousand-year history of "countless dreadful experiences." He was sure that his country had adopted its political countenance under duress, and fervently hoped that "some happy change" would again permit Hungarians to continue their "national life where we lost it by losing the war." To such a change and to such a time he looked forward.

Elle est constatée souvent chez l'enfant où on ne peut invoquer un état inflammatoire ancien avec hyper kératose consécutive. Elle donne lieu parfois à cet âge à une dissémination vers la base de la langue qui contraint à une exérèse de l'amygdale, considérée, judicieusement semble-t-il, comme le foyer initial et dont l'ablation favorise la guérison.

On a observé aussi la propagation de clous mycosiques aux voies aériennes et digestives supérieures. Wright en a décrit sur le cornet inférieur, Wolff dans le nasopharynx, Dubler dans le larynx, le pharynx et l'oesophage.

Sans doute peut-on admettre qu'une muqueuse du type respiratoire peut subir par inflammation ou dystrophie une métaplasie, mais la multiplication en foyers disséminés, de productions mycosiques donne plus de vraisemblance à une colonisation mycélienne. C'était l'opinion émise par Heryng, qui en 1884, parlait de mycose leptothrixique, à propos de localisations trachéales. Elles avaient été également signalées par Sichshorst et Spiess.

En 1932 David (de Galatz), (Revue de Laryngologie p. 339) rapporte l'observation très détaillée d'un jeune homme de 18 ans, qui était venu le consulter pour crachats hémoptosïques. On le crut atteint de tuberculose pulmonaire en raison de la toux et de fièvre élevée.

Sur le pôle inférieur de l'amygdale gauche on apercevait 4 à 5 points mycosiques.

La trachéoscopie fit découvrir sur une muqueuse rouge une série de points blancs, saillants et nâcrés, très denses surtout, sur la paroi antérieure. L'examen des prélèvements montra un épithélium pavimenteux stratifié avec kératinisation de la couche superficielle; flore microbienne abondante en bacilles de Gram positif d'aspect diphtéroïde.

Le raclage des points blancs du pharynx avait donné des pseudo-diphtériques et des Leptothrix.

Une trachéoscopie ultérieure avait permis de retrouver dans le mucus des cultures pures de Leptothrix.

Le traitement instauré: Iode, argent, bismuth, avait entrainé la diminution progressive des touffes mycosiques; mais il semble que ce fut surtout la Roentgenthérapie qui réalisa le nettoyage de la muqueuse, jusque-là infiltrée et tapissée de points blancs au point qu'on né distinguait pas les anneaux de la trachée.

La guérison clinique complète fut obtenue. David considère ce cas comme un exemple de mycose leptotrixique à localisation trachéale.

Relatant au début de sa publication les réserves exprimées sur le rôle des éléments mycéliens, il termine en considérant que peut-être le Leptothrix n'est qu'un envahisseur, secondaire sur une muqueuse irritée par une inflammation chronique.

La kératose serait favorisée par un terrain prédisposé. En résumé, trois facteurs s'associeraient pour constituer la mycose: le terrain, un foyer infectieux local, le Leptothrix.

Si la part que joue le Leptothrix dans la dégérescence de l'épithélium est incertaine, sa présence au niveau des productions kératosiques n'est pas douteuse et elle est assez fréquemment observée pour peu qu'on se donne la peine de la rechercher.

Je l'ai observée personnellement dans 3 cas récents dont je vais relater brièvement l'histoire.

Un enfant de 11 ans, fils de médecin, qui jusque-là n'avait présenté aucun accident pharyngé, a vu apparaitre, en cours d'hiver 1954, à la surface de ses amygdales une série de touffes blanc-jaunâtre implantées dans ses cryptes. Une intervention fut décidée pour la fin de l'année scolaire, pour ne pas interrompre les études. Mais la

lationship Between Anchoring Sutures and the Pancreatic Duct: To acquire a better understanding, the pancreas may be divided in the following manner (Fig. 1): First, assuming the adherent portion of this gland with the duodenum to be a zone in subdividing this gland, denoted as *C*. The portion to the right of portion *C*, such as the isthmus, the tuber omentale and others, are designated by capital letters *D*, *E*, etc., respectively. Anchoring sutures are most commonly placed into portion *E*, and next commonly into portion *D* or *C*. Roentgen studies and measurements of consecutive transections of this gland were done in order to ascertain the precise location of the pancreatic duct. The roentgenogram of the pancreas taken in the ventrodorsal direction revealed that the main duct ran along the middle portion of this gland, meandering to some extent. Another roentgenogram, taken in the craniocaudal direction, revealed that the main duct ran dorsally in the head of this gland (Fig. 2). The needle seen in this picture indicates the site of the anchoring sutures. Consecutive transections used in this study were obtained from the specimen which had been treated with solution of formaldehyde after the injection of red opaque substances into the main duct. Table 2 presents the data on location of the main duct obtained from 12 fresh corpses. It will be noted that the head of the pancreas, portion *A* and *B*, is wider, while the isthmus, portion *D*, is the narrowest. It will be understood also that the main duct runs dorsally in the head of the pancreas and that it is not compromised by these anchoring sutures, placed at most only 2 mm. deep.

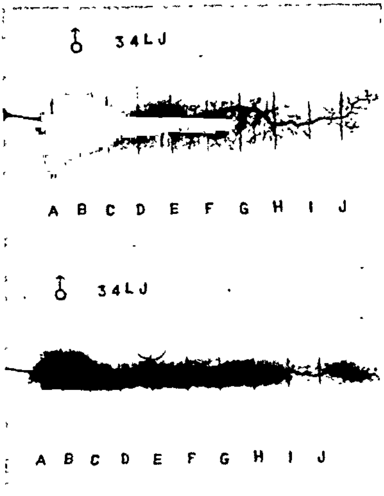

Fig. 1.—Roentgenograms of pancreatic duct. The needle indicates the site of anchoring sutures.

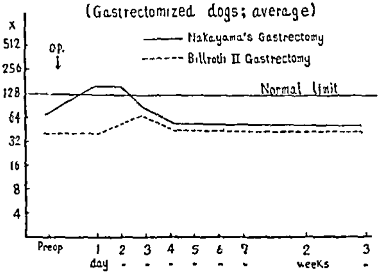

Fig. 2.—Serum amylase concentration.

b. Histologic Changes: Histologic study was done in both animal and clinical cases in order to pursue the postoperative changes of the pancreas. In experiments on dogs, a consecutive observation was carried out for one week to six months after operation by this method. Clinical study was also done with patients who died of some complication not involving this gland. This study indicated the following facts: In one week there occurred an adhesion between the gastric and the

largement appliqués, sans résultat. L'extension se poursuivait aussi bien sur le pharynx que sur la base de la langue.

Il en a été de même chez un bébé de 20 mois où une amygdalite caséeuse, avec moules indurés et incrustés, révèla à la fois du staphylocoque et du Leptothrix. Le staphylocoque ne céda pas aux antibiotiques locaux et généraux. Les clous mycosiques résistèrent à l'iode.

Par contre la diathermocoagulation est reconnue comme un procédé actif et de souveraine efficacité. Tous les auteurs la préconisent. Dans l'Encyclopédie Médico-Chirurgicale, elle est prônée aussi bien par les sceptiques, pour la Pharyngo-Kératose (Dr. Baldenweck), que par les orthodoxes, pour la Mycose (Dr. Gaston).

Quand on sait combien est difficile et décevant le traitement diathermique des amygdales cryptiques et caséeuses, génératrices d'abcès ou de poussées articulaires et rénales, on demeure un peu surpris du succès rapide de la même méthode en matière de Pharyngo-Kératose.

La Roentgenthérapie, la Haute-Fréquence n'ont-elles pas une action élective sur la colonie microbienne ou parasitaire?

Le résultat de l'exérèse chirurgicale des amygdales palatines, suivies de l'arrêt de propagation des "clous Kératosiques" vers l'amygdale linguale, et bien vite, la disparition de cette localisation, laisse supposer aussi la destruction d'un foyer de dissémination.

L'inoculation est peut-être accidentelle et fortuite, favorisée par des circonstances de terrain ou d'organe, mais son rôle n'est probablement pas négligeable et son identification est indispensable.

RÉSUMÉ

La mycose pharyngée fut décrite par Frankel en 1873 et attribuée au Leptothrix.

Mais dès cette publication, les auteurs allemands (Hamm, Torhost, Siebermann), mirent en doute le facteur parasitaire et insistèrent sur les lésions épithéliales de la muqueuse amygdalienne, aboutissant à une "Kératose."

Les auteurs français (Dr. Baldenweck, Prof. Maduro) contestent la mycose et lui substituent le nom de Pharyngo-Kératose.

Il convient cependant de retenir l'opinion de laryngologistes avertis qui ont décrit des propagations de Leptothrix à la trachée.

La mycose est fréquente chez le jeune enfant. Les filaments de Leptothrix sont souvent retrouvés dans les "clous Kératosiques."

Enfin le traitement de la mycose par les méthodes physiques semble plus facile que celui des inflammations chroniques habituelles de l'amygdale palatine.

SUMMARY

Pharyngeal mycosis was described by Frankel in 1873 and was attributed to Leptothrix infestation. The German authors Hamm, Torhost and Siebermann, however, expressed doubt as to the parasitic factor and insisted that the disease was due to lesions of the tonsillar mucosa, resulting in keratosis. Certain French authors (Baldenweck, Maduro) objected to the term "mycosis" and substituted "Pharyngokeratosis." Some, nevertheless, remain in agreement with various laryngologists who have described the propagation of Leptothrix in the trachea.

The disease occurs frequently in young children. The filaments of Leptothrix are often discernible in the keratotic lesions. Treatment would appear to be simpler than that of chronic inflammations of the tonsils and palate.

malarial drugs, every surgeon in the tropics has to suspect malaria as a cause of fever in newly admitted or postoperative patients. Examination of the thick blood film fortunately indicates the proper diagnosis, and treatment can be instituted at once. I have observed several cases of minor trauma in which, after admission to the hospital, there has been fever and malaria parasites have been present in the blood.

Rupture of the spleen, although rare in British Honduras, still occurs. Splenectomy, performed as early as possible before the catastrophic intraperitoneal hemorrhage has occurred, is a life-saving measure.

Most common, from the surgical point of view, is infestation by worms. It would hardly be an exaggeration to state that the majority of children in tropical countries, if not all, have intestinal worms. These poor children come to the hospital with a great variety of abdominal disturbances, ranging from violent symptoms of acute abdominal disease to mild indigestion and malnutrition. Infestation with Ascaris lumbricoides often demands surgical intervention. In my practice in British Honduras I have had to perform several laparotomies on children. They were admitted to the hospital with symptoms of acute obstruction, peritonitis or appendicitis and required emergency operations. In 1 case of obstruction I discovered that this was caused by about 150 live ascarid completely blocking the intestinal lumen. The child was admitted too late and unfortunately died after the operation. Another, a 5-year-old boy, had Ascaris lumbricoides in the appendix (Fig. 2). He was admitted to my department with symptoms of acute abdominal disease, a temperature of 100F. and a pulse rate of 140. Laparotomy revealed some free fluid in the abdominal cavity, bluish discoloration of the intestine and the presence of two live ascaria in the appendix. After appendectomy oil of chenopodium mixture was given, and three days later the child passed another ascaris. Convalescence was otherwise uneventful, and the boy was discharged from the hospital twelve days later.

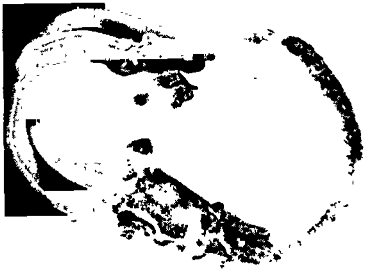

Fig. 2.—Appendicular obstruction by A. lumbricoides (author's case).

Amebiasis. — Although amebiasis may occur in every country, patients in the tropics usually seek medical aid in the late stages of the disease. The surgeon may encounter cases of colitis, with bleeding ulcerations, or abscess of the liver. The first condition may sometimes cause dangerous bleeding, perforation and peritonitis and calls for emergency laparotomy; the second usually requires aspiration of the abscess. Treatment of either is successful only if supported by emetine or chloroquin. Often on opening the abdomen for peritonitis, I have observed one or more perforated ulcers of the colon. Recovery followed repair of the perforations and the administration of emetine. In 1 case of hepatic abscess (the first I ever encountered), I aspirated several times, removing a total of 3 pints of "chocolate" pus. This aspiration, supported by chloroquin, produced quick recovery.

Malnutrition—Malnutrition is exceedingly common in the tropics. It is caused not only by an insufficient and unbalanced diet but by poor function of the liver,

papillaire, en particulier au niveau du segment temporal.

D'importantes suffusions sanguines marbrent le segment nasal de la papille en débordant sur le segment temporal et surtout sur la région péripapillaire nasale.

Le segment temporal du disque apparait rosé, parcouru d'une fine arborisation capillaire et ponctué de points réfringents.

Les vaisseaux sont relativement rares, mais, si les veines ne montrent qu'un degré discret de dilatation, le calibre artériel apparait considérablement réduit: artères et veines décrivent une large boucle pour enjamber les plis rétiniens péripapillaires.

La rétine interpapillomaculaire révèle une infiltration oedémateuse tandis qu'une macula framboisée aux reflets accentués centre une région périmaculaire grisâtre, infiltrée d'oedème.

La T.a.r. est a 120 et, fait remarquable, on n'observe pas de signe du croisement.

2) *a gauche*: On observe le même aspect, mais nettement moins prononcé. L'oedème papillaire et surtout péripapillaire est infiniment plus discret. On peut ainsi mettre en évidence, a côté d'un segment nasal du disque encombré également de suffusions sanguines, un aspect cireux, d'allure atrophique, du segment temporal.

La T.a.r est a 140.

L'examen du Champ visuel aurait dû être particulièrement instructif. Mais, en raison de l'installation tres récente du service, nous ne disposons pour l'instant que d'un Landolt très primitif.

L'étude des schemas périmetriques, pour grossière qu'elle soit, permet cependant de mettre en evidence un retrécissement concentrique du champ.

Le déficit est surtout accusé du côté nasal dans chacun des champs sans que l'on puisse pour autant parler d'hémianopsie binasale.

L'examen radiologique apporte un certain nombre de précisions indispensables. Les clichés de profil montrent un important agrandissement de la selle turcique, surtout au profit de sa portion postéroinférieure. On observe la disparition des apophyses clinoïdes postérieures et la destruction de la lame quadrilatère. Cet

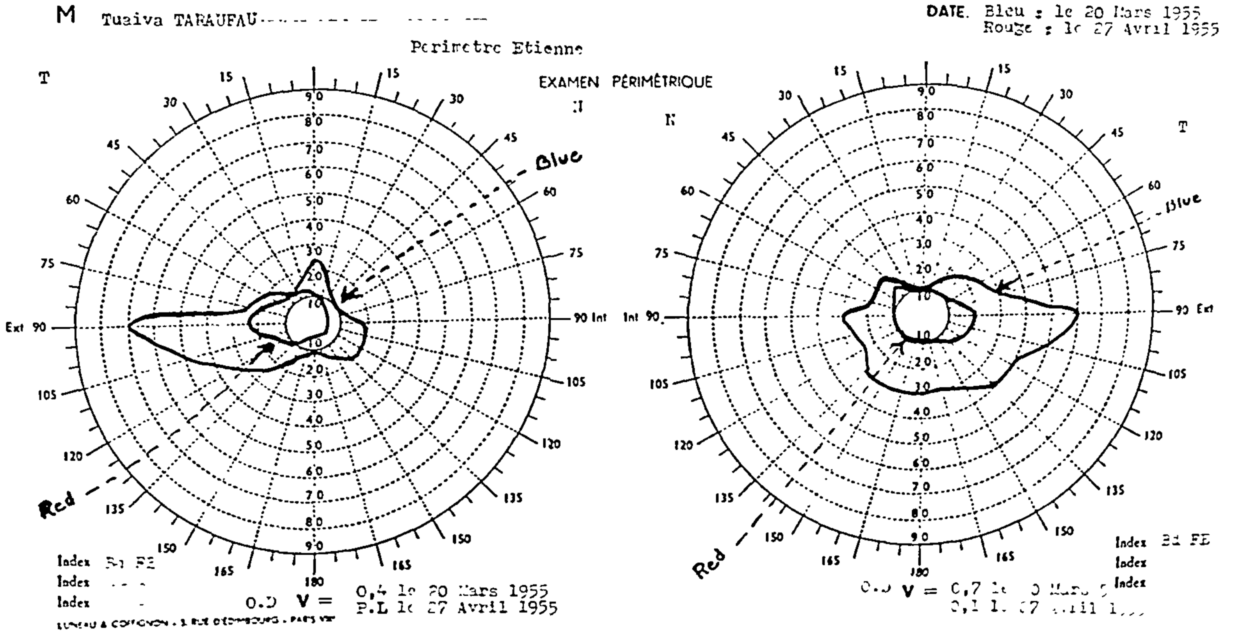

Chart 1 (see text).

There are many theories concerning the cause of this disease, which I shall not mention here. I wish to call attention, however, to the marked incidence of this condition in Negresses. It seems almost to be a racial peculiarity. Can it be due to the racial fibroblastic tendency? Does the condition follow trauma or irritation during their well-known early sexual activity?

4. Another racial disease of the Negro is sickle cell disease,[3] which can cause many pathologic changes in bone marrow, e.g., osteomyelitis or avascular necrosis of the head of the femur. Examination of the blood for sickle cells is advisable in all operative cases, as fatal postoperative complications due to unrecognized sickle cell disease have occurred (Fig. 7).

Malignant Growth.—The most common malignant growth in British Honduras is carcinoma of the cervix. During the first six months of this year I have observed 26 cases more than I encountered last year. This is a very high figure for a population of 80,000. Many more cases confront other doctors during that time; many more are no doubt lying unnoticed in remote villages.

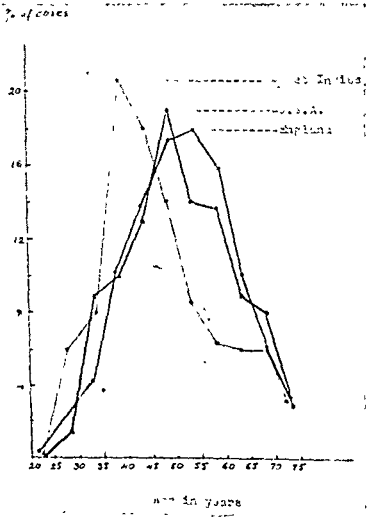

Fig. 8.—Incidence of carcinoma of the cervix in relation to age.

Some of the patients have been comparatively young women. This is in agreement with recent work at U.C.W.I. by Bras, Stewart, Pinkerton and Miller, which shows that the maximum incidence of carcinoma of the cervix in Jamaica is reached ten years earlier than in the United States and fifteen years earlier than in England (Fig. 8).

In explanation of this early age incidence I am inclined to the opinion that cervical carcinoma tends to appear earlier in women whose sexual activity and childbearing begin earlier. If one accepts the theory that sexual activity and childbearing have a carcinogenic action which "take an average of twenty years to produce its effect" (Maliphant, 1948), one easily finds an explanation of the early age incidence, as it is known that sexual activity and childbearing begin among tropical peoples shortly after puberty.

Treatment of carcinoma of the cervix in some remote places in the tropics is difficult because 1) the patient usually comes to the hospital in an advanced stage of the disease (second, third or fourth), 2) and not all hospitals have facilities for irradiation treatment and the patients are too poor to afford travel abroad. In many cases, therefore, operation alone, no matter how extensive, does not secure a successful result.

Early microscopic diagnosis is the essential factor. In differential diagnosis special attention should be paid to granuloma inguinale and tuberculosis of the cervix which sometimes show similar clinical pictures.

In connection with this disease, I should like to stress the great number of vaginal

notre enquête clinique, un bilan neurologique, dont les résultats peuvent etre ainsi schématisés (Dr. de Jaurreguibery).

a) *Motricité*: La motilité spontanée parait normale: dicrète diminution de la force musculaire au membre inferieur droit que l'on peut sans doute rapporter a la fracture ancienne. Il n'existe pas de mouvements anormaux, notamment pas de tremblement, ni de clonies. Pas de modification du tonus.

b) *Sensibilité subjective*: quelques fourmillements au niveau des mains, surtout la nuit.

Sensibilité objective: La sensibilité superficielle parait emoussée au niveau des membres supérieurs, au tact et a la douleur. Aucune anomalie de la sensibilité profonde ne peut être mise en évidence.

c) *Réflexes ostéo-tendineux* généralement un peu vifs.

Réflexes cutanés normaux: Pas de Babinski, en particulier.

d) Ni incontinence, ni rétention au niveau des sphincters.

e) Trophicité et vaso-moticité normales.

f) Les paires craniennes ne revèlent aucun déficit notable, à l'exception naturellement du II. Peut-être peut-on noter une allégation de fourmillements dans le domaine du V, au niveau de l'hémiface gauche!

g) Pas de signes de la série extra-pyramidale.

h) Du point de vue cérébelleux, une dysmétrie dejá notée.

i) Les gnosies et praxies sont normales.

j) Quant aux enveloppes, il convient de noter une artère temporale gauche nettement visible et flexueuse. Pas de signes meningés a proprement parler: il faut toutefois noter que le sujet se plaint de fréquentes douleurs a la nuque.

k) Fonctions intellectuelles, affectives et comportement normaux.

L'examen systématique des autres appareils n'a revélé aucune lésion cliniquement ou radiologiquement décelable: la T. a.h est a 14,5/9 et il n'existe pas de signes cliniques nets de la série diencéphalo-hypophysaire.

Quant au bilan humoral, il peut se résumer de la manière suivante:

Hémogramme:

Numération rouge	5 200 000
Tx Hb	70% = 12 gr
Numération blanche	12 000
Poly neutro	55
eosino	4
baso	1
Lymphocytes	37
Urée dans le sang	0,30 gr‰
Glycémie	0,96 gr‰

Examen du L.C.R liquide eau de roche
1,3 lymphocyte au mm3

Albumine	0,70‰
sucre	0,40‰
Chlorure	7,31‰

L.C.R enjet a la P.L

Le potentiel, d'investigation de l'Hopital de Papeete est malheureusement epuisé á ce stade de l'enquête et nous prive d'entreprendre un certain nombre de recherches dont la nécessité est cependant évidente: artériographie, encéphalogramme.

Reconnaissons, malgré tout, que les seuls examens clinique et radiographique sont éloquents et paraissent localiser avec suffisament de précision le siège de la lésion au niveau de l'étage anterieur du crane.

Nous nous trouvons, en effet, en présence d'un malade porteur d'une stase papillaire bilatérale, cependant plus accentuée d'un côté, tandis que l'autre révêle l'existence d'un processus atrophique contemporain: rien n'empèche d'imaginer qu'il s'agit d'une atrophie post-stase en voie d'organisation. Mais l'image ressemble assez étrangement a l'aspect que Schultz-Zenden décrivit pour la première fois à propos d'une tumeur épidermoide du lobe frontal et dont Foster-Kennedy, aux alentours des anneés 1915, devait donner la systématisation topographique.

Folge eines Zökumkarzinoms berichtet. Ein komplizierender Faktor bestand in einem Kardiospasmus. Wahrscheinlich bestand der Krebs bereits seit mindestens einem Jahr, seine Entdeckung wurde aber wohl durch das gleichzeitige Vorliegen des Kardiospasmus verzögert.

RIASSUNTO

Viene riferito un caso di intussuscezione ileo-cecale in adulto, dovuta ad un carcinoma del ceco e complicata da achalasia dell'esofago. Si ritiene probabile che il carcinoma fosse presente da almeno un anno e che la sua scoperta sia stata ritardata dalla presenza della achalasia esofagea.

RÉSUMÉ

L'auteur décrit un cas d'invagination iléocoecale chez l'adulte, provoquée par un carcinome du rectum compliqué d'achalasie de l'oesophage. Il est à présumer que le carcinome detait d'un an au moins; son diagnostic a été retardé du fait de la complication oesophagienne.

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The world at the present day stands in need of two kinds of things. On the one hand, organization—political organization for the elimination of wars, economic organization to enable men to work productively, especially in the countries that have been devastated by war, educational organization to generate a sane internationalism. On the other hand it needs certain moral qualities — the qualities which have been advocated by moralists for many ages, but hitherto with little success. The qualities most needed are charity and tolerance, not some form of fanatical faith such as is offered to us by the various rampant isms. I think these two aims, the organizational and the ethical, are closely interwoven; given either the other would soon follow. But, in effect, if the world is to move in the right direction it will have to move simultaneously in both respects. There will have to be a gradual lessening of the evil passions which are the natural aftermath of war, and a gradual increase of the organizations by means of which mankind can bring each other mutual help. There will have to be a realization at once intellectual and moral that we are all one family, and that the happiness of no one branch of this family can be built securely upon the ruin of another. At the present time, moral defects stand in the way of clear thinking, and muddled thinking encourages moral defects. Perhaps, though I scarcely dare to hope it, the hydrogen bomb will terrify mankind into sanity and tolerance. If this should happen we shall have reason to bless its inventors.

—*Russell*

au dessus et en dehors du chiasma après avoir brise le cadre sellaire.

Une artériographie nous aurait sans doute permis de faire le point: en son absence le tableau clinique etait assez éloquent pour imposer l'intervention.

Le Dr. Ralph B. Cloward, neuro-chirurgien à Honolulu, a qui nous avons pu adresser notre malade dans des délais raisonnables, a bien voulu nous raconter dans le detail, son intervention.

A son arrivée aux Hawaï, le malade etait aveugle de O.G et ne discernait, de O.D, que les mouvements de la main. Convaincu a son tour, de la localisation dans l'étage antérieur du crâne, du siège de la lésion et en raison de la perte fonctionnelle de O.G, le Dr. Cloward commencait son intervention par une craniotomie frontale gauche, a l'aide d'un petit volet au niveau du front. Mais, dès l'ouverture de la duremère, le cerveau se revelait infiltré d'oedème au point que 12 On devait renoncer a soulever le lobe frontal pour exposer la région chiasmatique.

Un volet supplémentaire, postérieur au premier, permettait de decouvri: tout le lobe en avant de la coronal suture mais devant l'impossibilité renouvelée de le mobiliser, on devait se résoudre à en amputer le pôle antérieur. Le soulèvement du lobe devenu ainsi réalisable, laissait découvrir une région chiasmatique libre de toute formation néoplasique, tant intra que supra ou laterosellaire. Mais, en revanche, on pouvait observer une tuméfaction d'allure kystique venant d'en arrière pour enjamber le chiasma optique et qui devait, à l'ouverture, se révéler le plancher du troisième ventricule.

A la suite de l'intervention, le malade était hémiplegique du côté droit pendant 4 jours; et après une tentative infructueuse d'encéphalographie, on décidait de pratiquer une artériographie carotidienne G qui montrait la présence d'une volumineuse lésion située au centre du cerveau, a G de la ligne médiane et dont le dessin vasculaire était caractéristique d'un méningiome.

Dès l'ouverture, au cours d'une deuxième intervention d'un volet plus postérieur atteignant en arrière la suture lambdoïde, on découvre les frontières de la tumeur, en relation avec la faux et la dure-mère. La neoplasie était enlevée après cautérisation de son pédicule.

L'amélioration, immédiate, permettait à notre malade de rejoindre Tahiti au bout de 1 mois et de subir un dernier séjour hospitalier pour une série d'implantations sous-conjonctivales de Placenta.

Son bilan ophtalmologique actuel montre une récuperation de l'acuité visuelle importante a Dr, puisqu'elle atteint 0,4, désormais, tandis qu'a G elle reste limitée a 1/20e. La tension oculaire est normale des deux côtés et si, s G, l'aspect du champ visuel demeure superposable a ce qu'il était avant l'intervention, a Drite, en revanche, on peut noter un élargissement relativement important des limites du champ qui atteignent désormais 25o sur chaque axe et 30o sur l'horizontal temporal.

Le F.O montre,

a G. une teinte cireuse du disque, dont les frontières sont désormais mieux dessinées encore qu'il persiste un léger flou à leur niveau.

Les plis rétiniens péripapillaires ont disparu, cependant que les vaisseaux decrivent encore quelques amples flexuosites.

Il n'y a plus d'hemorragies.

a Dr. une coloration blanc rosé du disque dont les bords sont encore imprécis. La récuperation de l'acuité visuelle après que la compression ait été levée a G, laisse espérer que l'on évitera la constitution d'une atrophie post-stase définitive.

On peut encore observer quelques boucles vasculaires mais ici comme a G, toute suffusion sanguine a disparu.

plete urinary incontinence following denervation of the bladder caused by radical hysterectomy and lymphadenectomy. Replacement of the vesical detrusor by an iliac detrusor resulted in almost complete cure.

About a year ago I performed the same plastic operation for substitution in a case of paraplegia following meningomyelitis. The intense dysuria and pollakiuria were corrected, incontinence disappeared during the day but persisted at night.

Two other patients had meningocele with extremely painful vesical symptoms. They were operated on only a few months ago. In 1 the result is excellent during the day but incontinence persists at night; in the other, although I did not obtain a good result, there is great amelioration of the symptoms.

In the last of these 5 patients, whose symptoms were of obscure neurogenic origin, an excellent result was obtained, but the case is too recent for evaluation.

It is my conviction, therefore, that vesical disturbances of neurogenic origin, i.e., those not resulting from contracture of the vesical neck but rather due to faulty function and lack of tone of the detrusor, can in certain instances be cured or improved by ileocystoplasty for substitution. This operation should take its place among operations on the nerves of the bladder. It can complement or replace the denervation operation, which I discarded long ago because of unfavorable results.

5. I attempted to replace the bladder in 3 patients who, after hysterectomy and lymphadenectomy, presented (among other mutilations) advanced vesicovaginal fistula. It was impossible to close the fistula in the contracted and sclerosed bladder by suture. In these cases I resected the bladder, leaving intact the neck and as much as possible of the trigone, with or without reimplantation of the ureters in the iliac loop. Up to the time of writing I have not had one valid result. Of these 3 patients, 1 died, the condition of 1 was ameliorated, and the case of the third is too recent for evaluation.

6. I performed ileocystoplasty for the following new but questionable indication: The patient presented congenital dysuria. Both transurethral and retropubic resection of the vesical neck had failed, as was evidenced by persistence of dysuria, incontinence and chronic in complete retention of urine in the bladder; the detrusor muscle was enlarged, thickened and atonic. Subtotal cystectomy for removal of the detrusor might have been sufficient, but I complemented it by ileocystoplasty. It is too soon to evaluate results, as the operation was only recently performed.

7. The last 3 cases I shall mention concern ileoplasty for replacement of one or both ureters.

In the first, an operative death resulted; the patient died because of renal insufficiency following replacement of left megaloureter by anastomosis of the ileum to the pelvis and to the bladder (nephrostomy of the right kidney had been previously carried out and the opposite kidney was nonfunctioning).

In the other 2 patients (women) left ureterovaginal fistula and stenosis of the right pelvic ureter had developed after hysterectomy and lymphadenectomy. In these patients I divided both ureters above the iliac vessels and, not being able to dissect them any lower because of sclerosis of the pelvis, implanted them in the branches of a U-shaped iliac loop anastomosed to the bladder at the concave surface. In the first case it became necessary to perform right nephrectomy, as the thin-walled right ureter had been torn during the ureteroiliac anastomosis. Both patients were operated upon less than a year prior to the time of writing. Careful recent clinical and roentgenographic rechecks

forme des carotides internes (Tassman) ou par les fléxuosites d'artères sclerosées (Paufique) . . . une arachnoïdite chiasmatique chronique (Yaskin et Alpers), une hydrócephalie interne, comme nous l'avons vu et enfin, plus récemment, une tumeur intrasellaire après rupture de son cadre (Blagojevic).

On a, certes, longuement discuté sur la définition même du syndrome de Foster-Kennedy et sur sa valeur de localisation topographique . . .

D'un point de vue théorique, il semble qu'il faille, en effet, avec Guillot et Bonamour, réserver le terme de Foster-Kennedy à l'aspect d'atrophie optique unilatérale et de stase papillaire contralatérale, sans déficit visuel; on pourrait cependant plaider que lorsque le malade est vu alors que sa lésion a déjà atteint un stade très avancé de son développement et que la stase papillaire est instalée depuis déjà longtemps, l'acuité visuelle ait pu être agressée du fait même d'une stase papillaire prolongée: et il ne paraît pas légitime de vouloir écarter du cadre du syndrome, les cas qui présentent une altération de l'acuité visuelle du côté apposé à l'atrophie, pour la seule raison que cette acuité est altérée.

Du point de vue de la valeur localisatrice, enfin, et après avoir fait la part des pseudo-syndromes de Foster-Kennedy d'origine vasculaire (Paufique) après avoir reconnu que la constatation d'un tel syndrome ne traduisait pas de manière automatique, la présence d'une tumeur au niveau de l'étage antérieur du crane; il convient, croyons-nous, de préciser qu'il demeure révélateur, dans la grande majorité des cas, d'une compression à ce niveau.

Dès sa constitution caractéristique, le syndrome est contemporain d'une hypertension intracranienne: il suggererait ainsi plus volontiers une lésion supra-sellaire, ou, à tout le moins, une lésion intrasellaire ayant brisé son cadre et se maquillant sous une symptomatologie d'emprunt. Ou enfin, une lésion latero-sellaire a un stade avancé de son développement.

L'allure clinique de l'affection, l'examen général et neurologique les examens complémentaires, radiographie, artériographie, encéphalographie prennent alors toute leur signification, encore qu'une élémentaire prudence soit de mise dans l'interprétation de leurs résultats.

Mais le diagnostic précis, avec quelques chances de succès, ne peut dépendre que de la confrontation d'une importante masse de renseignements divers dont chacun en particulier, n'a sans doute qu'une valeur relative et dont l'ensemble même ne pourra trop souvent que conduire vers une intervention dont on devra attendre la lumière.

RÉSUMÉ

Il s'agit d'un meningiome de la duremere et de la faux du cerveau comprimant le IIIe ventricule et cause d'hydrocephalie interne par blocage de l'aqueduc de Sylvius. Le plancher du ventricule dilate, enjambant le chiasma optique exercait a son tour une compression sur le nerf optique G, provoquant l'apparition d'un syndrome de Foster-Kennedy.

L'intervention realisee par le Dr. Cloward a Honolulu, amenait la sedation immediate des symptomes subjectifs et la recuperation d'une acuite visuelle utilisable.

L'auteur passe en revue les diverses etiologies du syndrome et precise les differents elements du diagnostic, soulignant en particulier le polymorphisme des deficits perimetriques. Il insiste sur la valeur localisatrice eminente du syndrome de Foster-Kennedy, qui traduit la presence, non pas d'une tumeur mais d'une compression au niveau de l'etage anterieur du crane: la presente observation temoigne que cette compression peut etre realisée a partir d'une tumeur a distance, par l'in-

agar by the pour plate technic. The quantitative plates were incubated at 37 C., and results were read after twenty-four and forty-eight hours' incubation. For qualitative bacteriologic study, one 4 mm. loop of all macroscopically turbid specimens was streaked in duplicate directly on trypticase soy blood agar plates (5 per cent defibrinated horse blood) and eosin-methylene blue-agar (E.M.B.) plates (Levine). All clear specimens after removal of the 0.1 ml. portions for quantitative study were centrifuged at 2,500 rpm for ten minutes. The centrifugate was streaked onto the same media as above.

A Furadantin diagnostic tablet (10 mg.), a tetracycline (2.5 mcg.) and a streptomycin (2.5 mcg.) wet filter paper disk[4] were placed on the site of initial streaking on each blood agar plate. One set of blood agar plates and one set of E.M.B. plates were incubated aerobically at 37 C. for twenty-four hours, and the other set of each media was incubated under strict anaerobic conditions.[5]

Quantitative plate counts were made and recorded on a basis of total organisms per milliliter, regardless of species. Generic and species identification was made on a basis of cultural, morphologic and biochemical studies. The media of King and his associates[6] were used for Pseudomonas aeruginosa and fluorescens differentiation. Enterococci were differentiated from hemolytic, nonhemolytic and viridans streptococci by inoculation into trypticase soy broth containing 6.5 per cent sodium chloride and by mannitol fermentation. Proteus was identified by the use of the urease test.[7] Paracolon species were identified on the basis of latent (ten to thirty days) lactose fermentation. Diphtheroids were identified by cultural growth and gram stain morphologic studies.

TABLE 1.—*Organisms and Their Susceptibility in Vitro to Furadantin in Patients with a Single Infection*

Species	*Total No.*	*Susceptible %*	*Resistant, %*
E. coli	25	24 (96)	1 (4)
A. aerogenes	18	9 (50)	9 (50)
Proteus species	11	9 (81.8)	2 (18.2)
Pseudomonas species	4	0 (—)	4 (100)
Ps. aeruginosa	3	0 (—)	3 (100)
Enterococci	4	4 (100)	0 (—)
Paracolbactrum species	1	0 (—)	1 (100)
Total	66	46 (69.7)	20 (30.3)

Susceptibility Testing. — A composite broth culture for Furadantin serial tube dilution susceptibility testing was made by picking three separate colonies of each species from each blood agar plate showing growth. These cultures were also used to reevaluate the initial Furadantin disk test and to determine the susceptibility of the isolates by the wet disk technic to tetracycline, chlortetracycline, oxytetracycline, chloramphenicol, neomycin and polymyxin.

The test tube susceptibility test for Furadantin was that previously described.[8] Serial tube dilution susceptibilities were not studied with the other antibiotics. Interpretation of the disk results was based on data previously published by one of the authors.[4b]

Assay.—The assay of Furadantin in urine after institution of therapy was done primarily by using a bio-assay Oxford cup technic. Good correlation with this method for Furadantin in the urine specimens was obtained with the spectophotometric method of Paul.[9] Quantitation was not of the same order as reported by Paul,[9] however, since the total output of urine for these patients was not determined. The presence or absence of Furadantin by bio-assay was considered significant. It is assumed that urine levels above those to be reported were present during therapy. Since the patients were not hospitalized, however, the Furadantin levels are in

Sección en Español

Flebodisector para Extraccion de la Safena Interna

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DESDE principios del año de 1.953 vengo practicando la extracción de la vena safena interna, como tratamiento de las várices del miembro inferior, por medio de un flebodisector que he ideado, que hace muy sencilla la intervención quirúrgica, y con el cual extraigo la vena muy fácilmente y en toda su integridad.

Actualmente se está acorde en que el tratamiento para las várices del miembro inferior que da mejores resultados, es el quirúgico, y se han descrito varias tecnicas operatorias entre las cuales estan: La tecnica de Robinson con inyección esclerosante, muy bien descrita en el *Dia Médico Argentino* del 15 de julio de 1.948, por el Dr. Luis Armando Baglietto. La técnica del hilo de algodón que deja en el lumen del vaso el Profesor de la Facultad de Medicina de Bogotá, Dr. Santiago Triana Cortés. Muchos cirujanos prefieren la extracción de la safena interna, haciendo incisiones a lo largo de todo el vaso para extraerlo totalmente e ir visualisando las colaterales y así poderlas ligar en su totalidad. Con el fin de evitar largas incisiones para extraer la safena interna, se han ideado varios instrumentos: El Dr. Carlos Alberto de Pierris, de Buenos Aires, describe en the *Journal of the International College of Surgeons*, de octubre de 1.954, un flebodisector que le permite extraer la safena con el menor traumatismo; en el mismo Journal de noviembre de 1.954, el Dr. Herbert D. Trace, de Chicago, describe un "Nuevo desgarrador venoso que pasa a traves de toda la safena sin necesidad de incisiones"; vale anotar que con excepción de dos pequeñas incisiones, (una, en la región inguinal, y otra, en el tercio inferior de la pierna) y extrae la vena de arriba hacia abajo.

El nuevo flebótomo o flebodisector que estoy usando, me ha permitido fáciles extracciones de la vena, minimum de traumatismo, un corto post-operatorio sin inconvenientes, deambulación precoz, incapacidad laboral máxima de 20 días.

El instrumento consta de una sonda metálica "a" de acero inoxidable, calibre 24, maleable, de 1m. 20 cms. de longitud, con rosca en sus dos extremidades; una de éstas está provista de una pequeña oliva conductora "b", y la otra de la parte disectora "c", que no es otra cosa que una oliva en forma de copa, cortante en el ángulo externo de su borde, de 3/8 de pulgada de diametro, por 3/4 a 1 pulgada de longitud. Tanto la oliva conductora como la copa, pueden cambiarse e voluntad merced a la rosca.

En un principio hice varias intervenciones con copas de diferentes tamaños, y creo que la que da mejores resultados, es la de las dimensiones anotadas. También hice extracciones con copas que tenían su corte en su ángulo interno, en su ángulo

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of allergic toxicity with Furadantin, eosinophil counts were made on a series of patients undergoing therapy.

Dosage.—The dose of Furadantin used was 100 mg. four times daily. A maximum dosage of 200 mg. four times a day was given to 2 patients over a period of ten days.

Evaluation.—Patients were considered cured when they were clinically free of symptoms and when five bacteriologic cultures, taken at weekly intervals after discontinuance of the drug, were negative.

Laboratory and Clinical Studies.—The laboratory and clinical results are reported in terms of the bacteriologic observations, as follows:

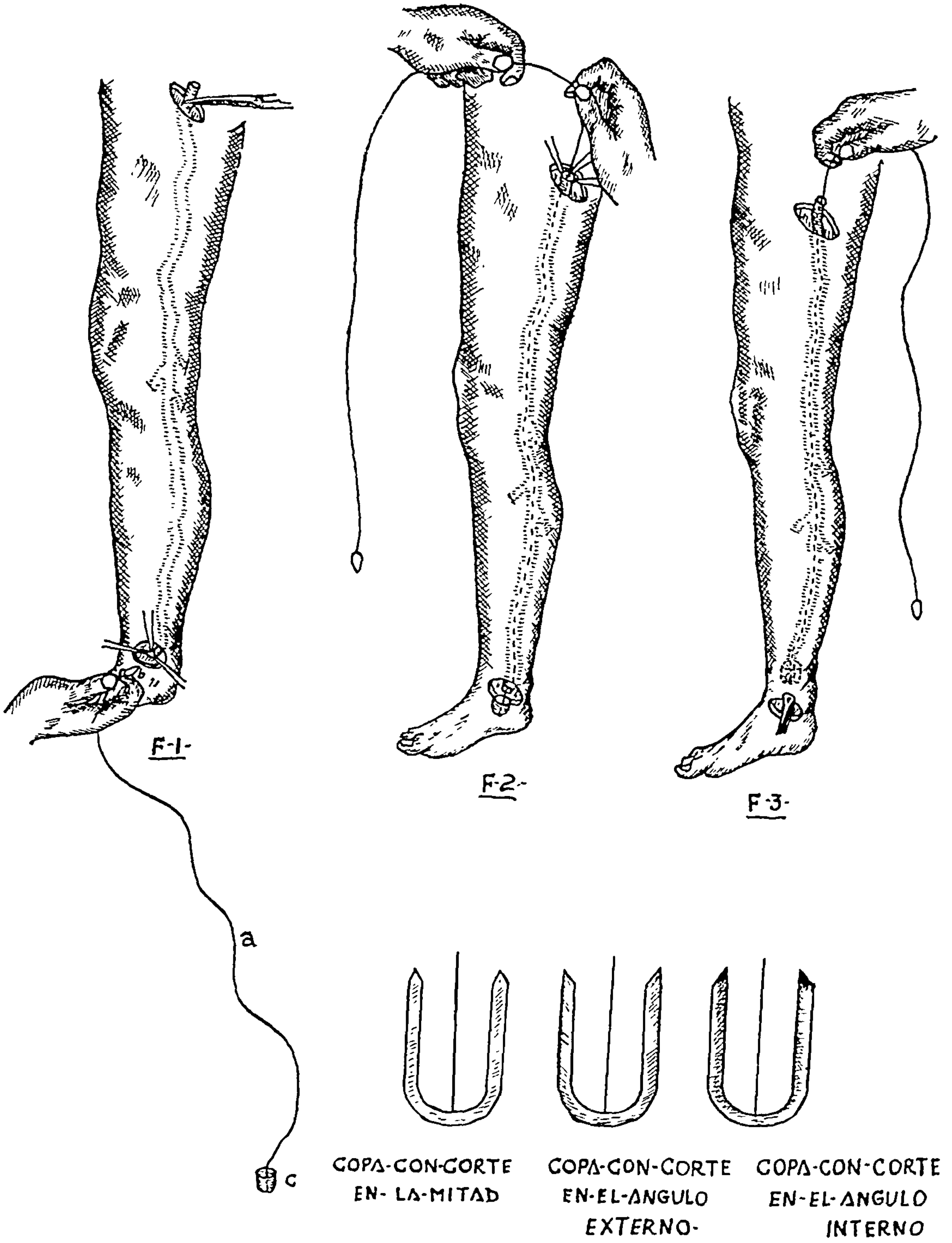
1. Patients on whom only 1 significant bacterial species was isolated at any time.
2. Patients in whom 2 significant different bacterial species were isolated, either on the first urine culture or during the course of the study.
3. Patients in whom 3 significant different bacterial species were initially isolated, or during their course of study.
4. Patients in whom 4 significant different bacterial species were initially isolated, or during their course of study.

Table 1 presents the data on 66 patients from whom a single microorganism was isolated. The species and their susceptibility to Furadantin are given in the table.

TABLE 4.—*Patients Infected with Two* Different Bacterial Species*

Species	*No. of Cases*	*Urine Assay* +	−	*Organisms Res.*	*Sus.*	*Patient Rx Intolerant*	*Bacterial Cure* +	−	*Clinical Cure* +	−	*Comment*
A. aerogenes Proteus sp.	4	4	0	2	2	0	2	2	3	1	One resistant Proteus in 2 cases, no bacterial cure. Clinical cure in one case with resistant organism
A. aerogenes E. coli	8	6	2	4	4	1	4	4	5	3	1 patient refractory to therapy. 3 patients with resistant organism. One patient with resistant organism had bacterial and clinical cure
A. aerogenes Pseudomonas sp.	1	1	0	1	0	0	0	1	0	1	
E. coli Proteus sp.	2	1	1	0	2	0	1	1	1	1	1 patient treated one week
E. coli Enterococci	3	2	1	0	3	0	1	2	1	2	1, no assay at any time, though organism susceptible. 1, last specimen, Enterococci present, no assay obtained
A. aerogenes Enterococci	1	1	0	0	1	0	1	0	1	0	Patient intolerant to therapy
Pseudomonas sp. Enterococci	1	1	0	1**	0	0	1	0	1	0	
Pseudomonas sp. E. coli	1	1	0	1	0	1	0	1	0	1	
Total	21	17	4	9	12	2	10	11	12	9	

*More than 1 organism isolated some time during treatment, not necessarily simultaneous infection.
**Though a resistant Pseudomonas species was present, therapy was effective.


F-1-
F-2-
F-3-
a
c
COPA-CON-CORTE EN-LA-MITAD
COPA-CON-CORTE EN-EL-ANGULO EXTERNO-
COPA-CON-CORTE EN-EL-ANGULO INTERNO

1, introducción de la sonda. *2*, la copa cortante llega a la herida maleolar. *3*, se ha iniciado la fleboextracción. La vena se introduce dentro de la copa.

la sonda no sigue el curso de la vena principa, sino de una accesoria; en este caso se retira y después de dos o tres intentos se consigue que pase por la luz de la safena interna. No he tenido caso alguno en el que la sonda se detenga, haciendo imposi-

same as the initial strain. This increase in drug tolerance is definitely of a low order in relation to the prolonged period of therapy.

In the other instance of clinical cure with two different bacterial species, 1 of which was resistant *in vitro* to Furadantin, the two species were an *in vitro* susceptible E. coli and an *in vitro* resistant A. aerogenes. This patient was given continued therapy for six weeks. The E. coli was eliminated, but the A. aerogenes persisted. The resistance of the species oscillated between 15 and 30 mg. per hundred milliliters. Because of the Furadantin resistance of this microorganism *in vitro,* the patient was given sulfisoxazole for four weeks. During this time the *in vitro* Furadantin-resistant A. aerogenes disappeared from the urine, but an *in vitro* Furadantin-susceptible E. coil reappeared. The patient was again given Furadantin therapy for two weeks, at the end of which time the urine was free of E. coli, but small numbers (less than 100 microorganisms per milliliter) of micrococci appeared in the urine. On the final bacteriologic evaluation of the urine, the *in vitro* Furadantin-susceptible E. coli again reappeared in the urine. At that time the patient was clinically free of symptoms. This case is included in the series because of the reappearance of organisms and the initial and ultimate effect of Furadantin, which can be assumed to be partially responsible for cure. One cannot deny the possibility that, if sulfisoxazole alone had been used in this single case, effective therapy could have resulted.

It is interesting to note that, in this series, bacteriologic and clinical cure was effected with 1 patient from whom enterococci, susceptible *in vitro* to Furadantin, and an *in vitro* resistant Pseudomonas species, other than aeruginosa, were isolated.

Of 21 patients with infections with two different bacterial species, clinical cure was effected in 57.1 per cent of the cases and bacteriologic cure in 47.6 per cent. In 1 instance there was a clinical cure but no bacteriologic cure.

Table 5 presents the data on 8 patients. Three different bacterial species were isolated from each. Of the 8 patients, clinical and bacteriologic cure was effected in 5 (62.5 per cent). Statistically these data are possibly not too significant, because of the limited number of cases. The effectiveness of Furadantin, however, is exemplified. In this series 1 patient with *in vitro* resistant E. coli and Pseudomonas species responded favorably to therapy. Also, cure was effected in 1 patient in whom 2 of the species, an E. coli and a Paracolbactrum sp. were susceptible *in vitro,* and one, an A. aerogenes, was resistant *in vitro* to Furadantin.

Table 6 presents the data on 5 patients, from whom 4 different bacterial species were isolated. In 2 of the 5, clinical and bacteriologic cure was effected. In 1 in-

TABLE 7.—*Summary of Data on 100 Patients Treated with Furadantin*

Type of Infection	*No. of Cases*	*Cure*		*Urine Assay*		*% Cure*		*Refractory to Therapy*	*Organisms Resistant in Vitro, No. of Cases*
		Bacterial	*Clinical*	*Positive*	*Negative*	*Bacterial*	*Clinical*		
1 species	66	42	42	50	16	63.6	63.6	4	19
2 species	21	10	12	17	4	47.9	57.1	2	9
3 species	8	5	5	8	0	62.5	62.5	0	6
4 species	5	2	2	5	0	40.0	40.0	0	4
Total	100	59	61	80	20	59.0	61.0	6	38

Editorials

An Ophthalmic Surgeon in Tahiti

THE French Oceanic Possessions have one striking characteristic, geographically speaking: the seemingly infinite dispersion of islands over a territory twice as large as France itself. In legend and lyric Oceania has innumerable charms; one remembers the gifted authors who have sung her praises, from Pierre Loti to James Norman Hall. Who that has ever read of Polynesian life can forget the polychrome splendor of the corals, the eternally renewed ply of light upon sand and water, or the suggestion that on some soft and heady evening, with proper (female) companion, the music of the ukulele may awaken in both the rhythms of eternity, a simplicity as deep and endless as truth itself?

I am not sympathetic to systematic seekers of inspiration, but it is true that a combination of events or the pursuit of a simple objective with another human being may bring forth the sort of timeless emotion that a talented interpreter can sometimes convey, Loti's *Book of Raraku* is undoubtedly convincing. One must also think gratefully of Tahiti as the spur that produced the unique creations of Gauguin. Nevertheless, when one contemplates these works of art, Tahiti in itself ceases to hold one's interest, as does the Provence of Van Gogh, the Arabia of Lawrence, the Spain of Hemingway or the big business world of John Dos Passos. It is the personality of the artist, speaking through his work, that wins one, and neither one's pleasure nor one's attention can be entirely detached from it. It would be useless for me, or for any man, to try to recreate a personal moment in the life of the artist and thereby justify his choice of a subject. It is a fact that the best offered by Tahiti affords romantic break from occidental conventions, and the life there can be portrayed, even now, so delightfully that it would be unthinkable to do away with the romance.

Nevertheless, the portrayal is not complete. It is common custom in these days to attribute all contemporary ills to a certain "system" of human existence. Probably it is the spirit of the system, rather than the system itself, that should be accused. At all events, life in Tahiti has brought me at least one step away from the fallacious belief that a mere breakaway from occidental convention is enough to enable one to escape these evils and rediscover a freshness long forgotten. Basically, life on the island of Pomare is much like life anywhere else, oscillating between deception, selfishness, indifference and abuse of freedom. Some mention of the usual medical routine may supply a clue to the actual picture.

Though I am a specialist in the treatment of diseases of the eye, I have always held that the boundaries of ophthalmology are much more inclusive. Ophthalmologic tests are valuable, for instance, in the diagnosis of intracranial pathologic conditions; this applies especially to examination of the visual fields and to fundoscopic studies. The results of such tests also have important bearing on many other diseases. Many factors in disease, sometimes

therapy. Bacteriologic culture of all urine specimens to confirm the clinical picture in cases of infection of the urinary tract, or to follow the effectiveness of therapy, is strongly recommended.

COMMENT

Treatment with Furadantin in 100 unselected cases of uncomplicated infection of the urinary tract infection has been reported. Bacteriologic and/or clinical cure in 61 per cent of cases confirms the effectiveness, as reported by other clinicians, of this chemotherapeutic agent in treating such infections when they are associated with the microorganisms identified in this study.

Infections of the urinary tract caused by proteus species are generally considered most difficult to treat effectively. A favorable response to Furadantin, however, was effected in certain instances when there were apparent complications with other gram-negative or gram-positive bacterial species. Furadantin was effective not only in infections with a single bacterial species but in infections involving several species, as well as in patients who underwent repeated, recurrent infections caused by different bacterial species.

Side reactions consisted of nausea in 6 patients. This is not considered a serious drawback to the administration of Furadantin. Prompt withdrawal of the drug was quickly followed by disappearance of the nausea.

The generally used dose of 100 mg. of Furadantin every four hours may be continued, with tolerant patients, for an extended period without any untoward manifestations.

It is pointed out from this study that the routine disk susceptibility test should be done coincidentally with the bacteriologic studies. There is an excellent correlation between the *in vitro* susceptibility and the therapeutic results. Using the presently available 100 mcg. Furadantin disks, a wide zone of clearing (20 mm. or more overall) indicates a highly susceptible microorganism. If the zone of clearing is between 12 and 15 mm. the organism is sensitive, and if the zone of clearing is less than 12 mm. the organism is moderately resistant. The degree of resistance as interpreted does not in itself mean any alteration from the regular 100 mg. schedule. Lack of response of an infection due to an organism susceptible *in vitro* indicates need for increase of the dose to 200 mg. every four hours for a period of ten days, if the patient is tolerant.

It has been demonstrated in this study that a concentration of active Furadantin in the urine as high as 30 mg. per hundred milliliters can be obtained. The susceptibility of most microorganisms isolated in this study was well within this range. It is considered that bacterial species refractory to concentrations above 30 mg. per hundred milliliters will not respond favorably to therapy, but, as has been shown, this does not always hold true.

The use of bacteriologic culture of all urine in the diagnosis and in the follow-up of therapy cannot be too strongly stressed. Diagnosing or evaluating infections of the urinary tract on the sole basis of the macroscopic appearance of the urine can be grossly misleading. Credence based on the report of routine urinalysis and interpretation based on the presence or absence of leukocytes per high power field can be in direct opposition to the true bacterial picture.

SUMMARY

1. Furadantin (N-(5-(nitro-2-furfurylidene)-1-aminohydantoin) was effectively used in the treatment of 61 of 100 patients with uncomplicated clinical infections of the urinary tract.

Bacteriologic studies of the urine of each patient isolated one to four of the

In the presence of the disastrous results and the discouraging morbidity and mortality rates, technic could not be standardized.

One should not be led to believe that modern colonic surgery is revolutionary. It has evolved slowly and is the result of scientific progress in many allied fields. All the refinements in diagnosis have contributed to early operations, the most important single factor in successful surgical therapy.

The universal use of roentgen technics and the growing familiarity with electrically lighted endoscopes have given tremendous diagnostic assistance.

Once a diagnosis is made, the immediate success of the operation will depend on the condition of the patient, the character and extent of the lesion and the facility with which the surgeon can remove it. All the defensive reserve of the body must be mobilized and restored to a state as nearly normal as possible. Locally, the field must be brought to the best possible condition for surgical invasion. When the patient is prepared and the lesion suited for surgical treatment, the technical relief should be in the hands of a well-trained surgeon.

When one is given a formula with as many variables as are presented by colonic surgery the results are bound to be equivocal, but, fortunately, judicious appraisal of the difficulties and intelligent application of improved modern resources has done much to reduce the morbidity and mortality rates in this field.

If one is to predict the future, he must be familiar with the past. Experience will establish some biometric laws, but most of these are empiric and subject to the fallacies of empiricism. As in every other field, research will probably contribute more to the success of colonic surgery than can be expected from improved technics.

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* * *

Where, for goodness sake, did Hippocrates study?—air. earth and water—man, and his kindred vegetables—diseases and death and all casualties and concomitants of humanity, were the pages he studied—everything that surrounds and nourishes us, were the objects of his attention and study. In a word, he read diligently and sagaciously the Great Book of Nature . . . instead of the books of man.

—*Waterhouse*

Con el estudio bacteriológico, se aislaron de la orina de cada paciente, de una a cuatro de las sigmentes bacterias: E coli, A. aerogenes, las especies de proteus, especies de enterococos y Pseudomonas diferentes de aeruginosa (Piociánico).

2. Se observó excelente correlación entre los resultados de los tests de susceptibilidad in vitro y los resultados clínicos, con la terapéutica; con pocas excepciones.

3. La confianza en la observación macroscópica rutinaria de la orina ó en la incidencia de leucocitos por campo de gran aumento como índice de infección pueden desorientar grandemente.

4. No obstante que hubo 6 casos en los cuales se observó intolerancia al Furadantin, las reacciones fueron siempre ligeros disturbios gastrointestinales. La queja más común fué náusea, que desaparecía rapidamente cuando se suspendía la administración de la droga.

5. No se encontraron reacciones alérgicas al Furadantin en ningún paciente en este estudio.

RÉSUMÉ

1. La Furadantine (N-(5 (nitro-2-furfurylidène)-i-aminohydantoine) a donné des résultats efficaces dans le traitement de 61% de cas d'infections cliniques simples su système urinaire.

Les examens bactériologiques ont été pratiqués en isolant de l'urine de chaque malade, 1 à 4 des éléments bactériens suivants: E. coli, A. aérogènes, protéobacilles, entérocoques, et pseudomonadacés autres que les aérogènes (pyocyaneus).

2. A peu d'exceptions près une excellente corrélation a été observée entre les tests in vitro et les résultats clinques avec traitement.

3. De grandes erreurs peuvent être commises si l'on se fie aux examens macroscopiques habituels de l'urine ou à l'incidence des leucocytes en tant qu'indication d'une infection.

4. Malgré 6 cas d'intolérance à la Furadantine, les réactions ont été bénignes et ont consisté en troubles gastro-intestinaux (les nausées, symptôme habituel, ont disparu dès l'interruption du traitement.

5. Aucune sensibilisation à la Furadantine n'a été constatée.

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The Treatment of Fractures. Vol. I. By Lorenz Böhler, Translated from the Thirteenth German Edition by Hans Tretter, Helen B. Luchini, Frank Kreuz, Otto A. Russe and Robert G. B. Bjornson. New York and London: Grune and Stratton, 1956. Pp. 1072, with 1721 illustrations.

For about ten years preceding World War II, surgeons from countries including the United States and Canada traveled to Vienna in order to study the methods of Lorenz Böhler and his assistants. Most of these surgeons returned to their home countries and reported to their colleagues that the Ünfallkrankenhaus, where Prof. Böhler and his assistants taught and energetically demonstrated the principles of caring for fractures and other injuries, was the Mecca to which all surgical pilgrims should go to learn about traumatology. Prof. Böhler, his assistant Ehalt and other members of his staff, visited Chicago, where I was privileged to meet them. I visited their hospital in Vienna shortly before the outbreak of World War II. I was impressed by the large number of severely injured patients who were being treated, both by day and by night, as outpatients or inpatients in the Accident Hospital in Vienna.

Volume I of the Fifth English edition of Böhler's reference books is the first completely new edition in English since the translation by Hey-Groves more than twenty years ago. The English translation has been accomplished by the aid of a team of able translators, including Drs. Hans Tretter, Commander Frank Kreuz of the United States Navy Medical Corps, Dr. R. G. B. Bjornson of Minneapolis, Minnesota, and Dr. Otto A. Russe.

Prof. Böhler gives Dr. Russe credit for a large part of the translation of Volume I and for all of the translation of Volumes II and III, which are yet to appear as part of this fifth edition in English.

Volume I is divided into two parts, Part I is headed "General Considerations." It contains a classification of fractures; complications and general principles of fracture treatment of recent open wounds and recent open fractures without sulfonamides or penicillin; and a section on the treatment of longstanding infected wounds and infected fractures without sulfonamides or penicillin. Prof. Böhler explains that there is still a shortage of antibiotics in Vienna and many other areas in the world. In the event of war, the shortage would be still more acute. For that reason he has reemphasized the methods of effective care of fractures and infections without the aid of antibiotics. Twenty pages are devoted to a discussion of war surgery and special army hospitals.

Part II is entitled: "Special Parts." This includes the treatment of fractures of the skull; dislocations of the mandible; fractures and dislocations of the spine; injuries of the chest; closed abdominal injuries caused by blunt force; open injuries to the abdomen; injuries to the urinary system; injuries to the rectum from pelvic fractures; injuries by impalement; fractures of the pelvis; dislocations of the pelvis; fractures of the clavicle; dislocations of the clavicle; fractures of the scapula, and fractures, dislocations or other injuries of the various components of the upper extremity. The last 90 pages of Volume I describe the treatment of fractures. and other injuries of the hand and fingers.

Prof. Böhler states in the Foreword to the fifth English edition that he has attempted to record in Volume I his experiences as Director of the Ünfallkrankenhaus, which has registered 660,000 cases of injury treated there from 1925 to 1955, with approximately 87,000 inpatients. Prof. Böhler also had a wide experience in the treatment of gunshot wounds of bones and joints during both World wars.

The general principles of treatment, as outlined by Böhler, are excellent. Specific technics used for certain types of fractures, however, would not be acceptable to many experienced orthopedic surgeons. Böhler still treats many fractures of the shaft of the physician and by myself. Testicular biopsy was not performed, on the assumption that in these previously fertile patients it would do more harm than good. This impression has been confirmed by Henri Bayle, who condemned testicular biopsy, being convinced that the slight hemorrhage contributes to subsequent fibrosis. It is the consensus that spermatogenesis is relatively unaffected by obliteration of the vas deferens. Bayle reported observing numerous mobile spermatozoa in 3 patients with congenital absence of the vas deferens, their respective ages being 41, 36 and 29 years. The successful results obtained in this series of cases are attributed to the method of splinting, careful approximation of the anastomotic site, minimal dissection and gentleness in the handling of tissues.

SUMMARY

Sterility following vasectomy was corrected successfully by anastomosis of the vas deferens in 90 per cent of the 20 cases reported in this series.

Any previous unsuccessful attempt at vasorrhaphy is not a contraindication to reoperation, as was evidenced by a successful result in 5 of 6 patients subjected to reoperation.

Testicular biopsy prior to vasorrhaphy was not performed in this series of cases.

Surgical occlusion of the vas does not appear to abolish spermatogenesis. Normal sperm were observed in 1 patient nineteen years after vasectomy.

Epididymovasorrhaphy should be attempted when anastomosis of the vas deferens is not technically feasible.

RIASSUNTO

Nel 90% dei 20 casi qui riportati la sterilità conseguente a vasectomia fu curata, con successo, anastomizzando il deferente.

Qualsiasi tentativo di vasoraffia fatto precedentemente senza un buon esito non controindica un nuovo intervento e ciò è reso evidente dagli ottimi risultati ottenuti in 5 o 6 pazienti sottoposti a reintervento.

In questa serie di casi non si fece mai la biopsia dei testicoli prima della vasorraffia.

L'occlusione chirurgica del vaso sembra che non abolisca la spermatogenesi. In un paziente si osservò, infatti, sperma normale a distanza di 19 anni dalla vasectomia.

Qualora non sia tecnicamente possibile l'anastomosi del deferente si può tentare l'epididimovasorraffia.

RESUMEN

La esterilidad consecutiva, a la sección de los conductos deferentes fué corregida con éxito por anastomosis de los conductos en 90 por ciento de los 20 casos reportados en esta serie.

Cualquier operación plástica que se haya intentado, previamente, sin éxito, no es contraindicación para reoperar, como pudo comprobarse por los resultados con éxito obtenidos, en 5 de 6 pacientes sometidos a reoperación. No se hizo biopsia testicular, previa a la anastomosis, en esta serie de casos.

La oclusión quirúrgica de los conductos no parece abolir la espermatogénesis. Se observó esperma normal en 1 paciente, diez y nueve años después de la sección de los conductos.

Plásticas con el epidídimo deben intentarse cuando la anastomosis del conducto no es posible tecnicamente.

ZUSAMMENFASSUNG

Die nach Samenstrangextirpation aufgetretene Unfruchtbarkeit e 90 Prozent einer Reihe von 2 pensable to the the physician and his associates.

M. T.

Surgery in General Practice. By Victor Richards. St. Louis: The C. V. Mosby Company, 1956. Pp. 947, with 476 illustrations.

This book is not only different but timely. The material represents the culmination of ten years' experience in the Stanford University Surgical Outpatient Clinics. Although several chapters have been written by associates of the author, he is familiar with the context. This familiarity did not result from merely reading galley proofs, but rather from having worked hand in hand with these men.

To define the scope of such a work as this is difficult. It includes seemingly minor ailments, life-endangering catastrophes, surgical problems of general office practice and emergency procedures required to save life or limb. Although operative technics are not included, basic principles have not been neglected.

Chapter 2 dealing with hemorrhage, blood replacement, blood substitutes and shock is presented in a pithy and worth-while manner. The author states that the "capillary leakage" theory of the mechanism of shock can be doubted because of recent studies with radio active isotopes. It would have been helpful if he had included a sentence concerning the results of such investigations. The latter statement is meant as a suggestion, not a criticism.

For particular commendation, Chapter 17, "Acute Abdominal Disorders," must be mentioned.

It is refreshing to read and review a medical book which is devoid of redundancy and "verborrhea." This book can be recommended unreservedly.

PHILIP THOREK, M.D.

Technical Methods and Procedures of the American Association of Blood Banks. Minneapolis: The Burgess Publishing Company, 1956. Revised ed. Pp. 111.

This manual of technics and procedures used in blood banks is a complete revision of a previous edition. New technics have been added, and the book has been brought up to standards of present-day knowledge. The text is clearly written, and an excellent index makes it easy for every technician using the booklet to find any particular subject.

Needless to say, this book is not intended to replace the textbook on the fundamentals of blood transfusion, but is merely a practical manual. The authors have stayed away from the discussion of controversial subjects e.g., Rh nomenclature. One can disagree with the paragraph on "carriers of hepatitis virus"; In this reviewer's opinion the icterus index does not belong in a modern laboratory, and at least two liver function tests (thymol turbidity and cephalin flocculation) should be the method of choice. It might have been useful to add that, even with the performance of these tests, it will not be possible to detect a large number of carriers of the hepatitis virus.

The bilirubin determination test belongs, in the opinion of the reviewer, among the routine tests done on the donor's blood, together with serologic tests and the blood count.

The Editorial Committee, consisting of Drs. John B. Ross, Morten Grove-Rasmussen, G. Albin Matson, William F. Murphy Jr., and Albert M. Wolf, can be congratulated on this fine booklet. It belongs in every blood bank and every laboratory that deals with blood transfusions.

WERNER F. EISENSTAEDT, M.D.

Hugh Roy Cullen, a Story of American Opportunity. By Ed Kilman and Theon Wright. Illustrated by Nick Eggenhoffer. New York: Prentice-Hall, 1954. Pp. 376.

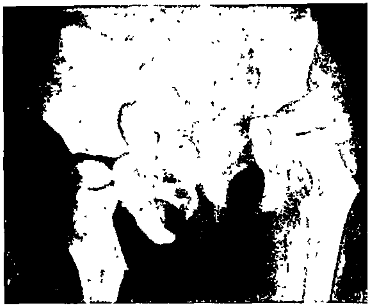
Roy Cullen, Texan, oil tycoon, and philanthropist, is known as prime benefactor of the University of Houston and founder of the Cullen Foundation, reputed the third largest charitable foundation in America. For the readers of this journal, however, the facet of his career which commands their attention must be his munificent gifts to hospitals and the fledgling Texas Medical some overall improvement in the total functioning of the child, apparently related to achievement of some degree of physical independence.

The most frequently encountered deformities of the lower extremities are adduction of the hip, flexion of the knee and equinus of the ankle. This has been the experience of other observers.[4] Less commonly observed have been flexion and internal rotation contractures of the hip, genu valgum and valgus and varus deformities of the foot.

It is essential to realize, as was emphasized by Phelps,[5] that in any case of spastic paralysis three types of muscles may be observed: (1) spastic, (2) normal, (3) flaccid and paralyzed. A careful muscle survey should be made, since the interrelation of the muscle groups will determine whether operation is indicated and, if so, the operative procedure of choice. In some instances it is necessary to examine the child on several occasions to obtain an adequate analysis of the muscular functional relation. Failure of proper evaluation of the power of the antagonist muscle groups was primarily responsible for the poor results in certain cases of our series.

It is axiomatic that operation must be preceded and followed by adequate, intelligent physiotherapy and occupational therapy.[6] The surgeon attempts to bring the antagonist muscle groups into gross equality and, as described by Crothers,[7] the operations are usually devised to give balance by subtraction of power.

It has been our practice to make a motion picture of each child before and after operation, since we have noted that clinical impressions are often misleading in retrospect and that muscle charts alone do not yield an accurate picture of the dynamic walking pattern. We consider the motion picture records of great value in the study and evaluation of the operative procedures



[illegible] 2-year-old girl wi
[illegible] of the left hip a
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with mild dysplasia of acetabulum.

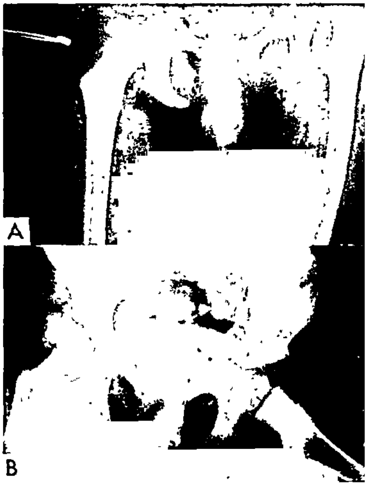

Fig. 2.—*A*, 2-year-old boy with severe spast adduction contracture and complete dislocation left hip. Discovered in routine pelvic roentge studies of children with cerebral palsy. *B*, roen genograms taken three months after operatio (adductor release and section of anterior branc of obturator nerve). Wide abduction with lon leg casts for six weeks, followed by abductio splint of Denis-Brown type. Note progressi reformation of acetabular roof and improved p sition of femoral head.

tions cannot be attributed to the therapeutic intrapleural pneumothorax.

The roentgenographic reproductions are of excellent quality and highly instructive. The book should be of great value not only to the roentgenologist but also to the surgeon, to whom it may be a guide in his decision as to the management of the patient.

FRITZ ROTHBART, M.D.

The Biliary Tract. By Julian A. Sterling, Baltimore: The Williams and Wilkins Company, 1956. Pp. 424, with 94 illustrations.

This monograph presents a detailed study of the biliary tract. It correlates well the clinical features, operative procedures and investigative studies. Because of this it has been beamed to the general practitioner, the gastroenterologist, the surgeon and the investigator. Included in the text are achievements, facts, errors and theories.

Chapter 2 deals with the anatomy of the biliary tract; it is very well written and is one of the outstanding sections of this well-documented work.

This reviewer has had difficulty in exposing the pancreatic portion of the common duct. It is the experience of many that this portion of the duct is more frequently surrounded by pancreatic tissue than not. It is for this reason that the so-called Kocher mobilization maneuver, as depicted in Figures 70-71, is frequently unsuccessful. Chapter 11 is entitled Choledochotomy. This section is extremely well done; some semantic confusion may result, however, in presenting procedures and illustrations that depict the placement of a T tube in the duct (choledochostomy). This is a minor criticism and is in no way intended to signify any lack of clarity of presentation.

An outstanding feature of the book is the number of lucid cholangiograms that amplify the text.

After each chapter an excellent bibliography is appended. This book should make a rewarding addition to the library of anyone interested in the subject of the biliary tract. It can be recommended highly.

PHILIP THOREK, M.D.

New Illustrated Practice of Surgery: Fascicule IX. Edited by Jean Quenu. Paris: G. Doin et Cie, 1956. Pp. 264, with 227 illustrations.

This is the ninth of a continuing series of brochures under the distinguished editorship of Prof. Quenu, covering operative technics in selected cases currently employed by the foremost surgeons of France. Earlier numbers of the series have been reviewed in these columns, the most recent of which was Fascicule VIII in Volume XXIII, Number 4 (April 1955, page 537). The following subjects are treated in this volume:

1. One Step Resection of Cervical Esophageal Diverticulum (J. Perrotin).
2. Operative Cure of a Diaphragmatic Hernia Following a Wound by a War Projectile (J. Quenu).
3. Jejunostomy en Y (J. Quenu).
4. Resection of Rectosigmoid Cancer by the Abdominal Route (J. Perrotin).
5. Abdomino-transanal Resection of the Rectum with Systematic Lowering of the Transverse Colon ("Pull-Through") (A. Toupet).
6. Ileo-Colo-Rectoplasty (J. Quenu).
7. Cholecystectomy for Biliary Lithiasis with Radiomanometric Control (J. Lebrun).
8. Total Colpectomy for Extensive Vaginal Prolapse (J. Quenu).

The favorable impressions made by previous issues are confirmed by study of the present one. The subject matter is entirely clinical. Graphic step-by-step drawings (Dupret and Rivillain) are supplemented by sufficient textual comment to elucidate the operative procedures.

French authorities of today cannot be accused of chauvinism in their discussions of surgical subjects, as is evidenced in the pages under review. Full credit is accorded surgeons of other nations for their contributions to the technics employed. Thus, M. Perrotin, after discussing the practical desiderata and indications for *jejunostomy*, indicates that the technic he outlines is essentially that described by Brintnall, Daum and Womack (Arch. Surg. 65:367 (Aug.) 1952. M. Toupet, in the preamble to this article, "Resection Abdomino-Transanale du Rectum Par Retournement, avec wear until he is old enough for a bone stabilization procedure. It is essential that the power of the pedal dorsiflexors be evaluated properly. If these muscles are weak, foot drop and resultant equinus will recur despite release of the calf muscles, lengthening of the achilles tendon, or nerve section. In such cases the foot should be maintained at a right angle by a dropfoot brace until a satisfactory age for surgical treatment of bone has been reached. At that time a posterior bone block operation of the Gill or Campbell type may be carried out or, in the presence of a strong calf muscle, a foot stabilization operation of the Lambrinudi type.

The age of eight or nine years is considered the minimum age for surgical stabilization of bone. Since, as we have stated, we favor early operation on the soft tissues when definitive indications are present, it is understandable that few stabilization procedures are included in our series up to the time of writing.

Tendon transplantation to help overcome varus or valgus may be partially beneficial at the earlier ages. As was noted by Green and McDermott,[2] however, pedal arthrodesis, with or without tendon transplantation, offers by far the best results among operations performed on the foot.

SUMMARY

Follow-up studies are presented of children with cerebral palsy who have undergone operations for deformities of the lower extremities. A total of 177 operations on 57 patients is reviewed, and specific operative procedures are discussed.

An integrated team approach to the child with cerebral palsy is stressed. Surgical intervention is never considered until diagnostic studies are complete and sufficient follow-up data available to justify an attempt to arrive at a prognosis.

Given definite clinical spastic deformities of the lower extremities, operation should be performed at an early age, when developmental progress and abnormal neuromotor patterns appear fairly well defined. Three years seems the optimal age, and in the author's opinion the development of disabling secondary contractures of joint capsules and neurovascular structures is avoided when operation is performed at that time.

Orthopedic surgical treatment is merely one facet of the comprehensive treatment of cerebral palsy in children.

ZUSAMMENFASSUNG

Es wird über Nachuntersuchungen von Kindern mit Gehirnlähmung berichtet, an denen Operationen zur Behandlung von Entstellungen der unteren Extremitäten vorgenommen worden waren. Es liegt eine Nachprüfung von 177 an 57 Kindern vorgenommenen Operationen vor. Spezifische operative Eingriffe werden erörtert.

Es wird hervorgehoben, dass die Behandlung von Kindern mit zentraler Lähmung durch eine zusammengesetzte Gruppe von Spezialisten ausgeführt werden soll. Ein chirurgischer Eingriff sollte niemals in Erwägung gezogen werden, solange nicht alle diagnostischen Untersuchungen durchgeführt sind und genügend Nachuntersuchungen stattgefunden haben, um die Möglichkeit einer prognostischen Auswertung zu gestatten.

Wenn spastische Entstellungen der unteren Extremitäten mit Sicherheit festgestellt sind, sollte die Operation im frühen Alter ausgeführt werden, wenn Fortschritte in der Entwicklung und unnormale neuromotorische Symptomenkomplexe einigermassen klar erkannt werden können. Das beste Alter scheint das von drei Jahren zu sein, und die Verfasser glauben, dass, wenn die Operation um diese Zeit ausgeführt wird, die Entwicklung untaug-

Abstracts from Current Literature

Analysis of One Hundred Twenty Consecutive Cases of Major Arterial Grafts. Humphries, A. W., de Wolfe, V. D., and Le Fevre, F., J.A.M.A. 161:953, 1956.

Freeze-dried sections of artery were used as homografts in 77 cases of aortoiliac and 43 cases of femoral obstruction. The preoperative angiograms were then restudied in order to determine which features had the greatest value in predicting the success or failure of the grafting operation. The age of the patient, the presence or absence of diabetes and the presence or absence of heart disease had little predictive value. Most important was the question of whether the outflow of the distal part of the graft would equal the inflow. When it did not, thrombosis frequently occurred. Of 103 cases in which the angiographic picture was favorable, results were good in 99; of the 11 in which it was unfavorable, in 3. There was also an indeterminate group of 6 cases in which 1 good result was obtained. Twelve patients died. In the others symptomatic improvement sometimes occurred even if the graft became occluded, and in no case was amputation necessary. In the cases in which the results were successful, pulsation reappeared distal to the graft and claudication pain was relieved. All patients with abdominal aneurysms, regardless of age, should undergo incision and grafting unless their general condition contraindicates surgical intervention.

WARREN A. YEMM, M.D.

Surgical Oophorectomy and Adrenalectomy in the Management of Advanced Breast Cancer: Clinical Indications and Results. Eckert, C.; Aikman, O.; Weichselbaum, T. E.; Elman, R.; Ackerman, L. V., Southern M. J. 49:436, 1956.

The authors' conclusions are as follows:

"It is apparent that these data are insufficient to clarify the question concerning the comparative effects of adrenalectomy and other methods of altering hormonal balance.

"We think it is unlikely that a superiority sufficiently great to justify adrenalectomy early in the course of the palliative management of advanced breast cancer will be demonstrated.

"Extensive pleural and pulmonary metastases are not likely to be affected; the operative risk is great when this type of metastatic involvement is present.

"At the present time, adrenalectomy should be reserved for the patient who has shown a good response to the administration of testosterone and/or oophorectomy, when the principal disease consists of osseous metastases, or local uncontrolled soft tissue tumor.

"Patients in the age group 40 to 50 are more likely to respond to adrenalectomy than are the very young or the very old.

"No relation between the histologic pattern of the tumor and the response to adrenalectomy can be observed in this series."

HENRY J. ROSEVEAR, M.D.

Doubts and Misgivings About The Treatment of Duodenal Ulcer. Farquharson, E. L., Lancet, 2:849. 1956.

In this short fact-laden article, the author brings sharply into focus the various operations that are most often employed at present for relief of intractable or complicated duodenal ulcer. His thesis revolves, as it must, around the minority of patients, who have perhaps been cured of their ulcers but have acquired in exchange postprandial symptoms or nutritional disturbances, directly related to the operation, which have not infrequently resulted in protracted illness, making the patient unfit to continue his work.

In addition to the malabsorption syndrome and other complications, which appear to arise largely because of the small size of the remaining gastric segment and from the manner in which it empties, Farquharson cites evidence indicating that even the most radical subtotal gastrectomy may not result in permanent hy-in 39 per cent. Cephalic presentations occurred in 87 per cent, breech presentations in 6.8 per cent, and transverse presentations in 4.8 per cent. Twins were delivered in 1.4 per cent.

The standard treatment at Baylor Hospital for central placenta praevia or placenta praevia that covers more than a marginal portion of the os is cesarean section. The amount of cervical dilatation must be taken into consideration, and section is the treatment if the patient has an unripe cervix or cervical dilatation of less than 5 cm. Twenty-nine patients, or 20 per cent, were delivered vaginally in this series. Artificial rupture of the fetal membranes and, in a few cases, pitocin were use to induce or hasten labor in the cases of several patients delivered by the vaginal route. It is important to remember in managing placenta praevia that rupture of the fetal membranes in the face of a transverse presentation, or posterior implantation of the placenta as described by Stallworthy,[9] can be dangerous. In the first instance additional manipulation is required, resulting in increased risk to the mother and the fetus. In the second instance, disproportion from the placenta riding over the sacral promontory occurs, displacing the presenting part anteriorly.

Cesarean section was performed in 108 cases, or 80 per cent. Fifteen were classic cesarean sections; 1 was extraperitoneal, and the remainder were of the low flap or the low cervical type. The technic of cesarean section is left to the operating surgeon, but the staff policy of the hospital is to avoid the placenta if at all possible, using a technic similar to that described by Butler[10] and Neligan.[11] By this technic one avoids making an incision directly through the placenta and, if possible, sweeping it to one side, and rupturing the membrane at the lateral placental margin. It is important to use an adequate incision, so that this manipulation may be carried out without too much difficulty. The amount of blood lost may be to some extent determined by the amount of time consumed from incision of the uterus to the clamping of the cord. One must remember that the fetus will lose considerably more blood if the incision is made through the placenta than if one avoids or goes around the placenta. In our series there was 1 case of recurrent placenta praevia after cesarean section. This substantiates, to some extent, Bender's premise[12] that manipulation of the lower uterine segment by conization, trachelorrhaphy and low cervical cesarean section predisposes to placenta praevia.

Delivery of the placenta, either vaginally or abdominally, is frequently accompanied by profuse and prolonged hemorrhage. The placenta is attached to the noncontractile lower uterine segment, and there is a diminution in the amount of decidua, with insufficient thromboplastin for local thrombosis. Rupture and tearing of the large dilated veins of the lower uterine segment frequently occurs. There may be some degree of placenta accreta, and forcible detachment of this leads to profuse bleeding. In some cases it is necessary to perform a rapid hysterectomy or, on occasion, to suture the bleeding vessels at the site of placental implantation prior to closing the uterus.

The management of vasa praevia or placenta praevia of a succenturiate lobe is much the same as the management of placenta praevia. In most cases, diagnosis is not made until after delivery has been accomplished by cesarean section.

Anesthesia in most cases was given by qualified physician anesthesiologists. Gas anesthesia was used in 84, or 61 per cent, of the 137 deliveries. This figure includes the 29 vaginal deliveries. In the remaining 52 cases, or 39 per cent, spinal anesthesia was employed. There has been a progressive increase over the past five years in the

Palliation of Mammary Carcinoma with Phosphoramide Drugs. Bateman, J. C., and Carlton, H. N., J.A.M.A. 162:701, 1956.

A comprehensive survey of statistics on carcinoma made by these authors reveals an increase in incidence, morbidity, and mortality in spite of improved roentgen technics, increasingly extensive operative procedures and education with regard to early detection. Because of the frequency of mammary cancer, patients with disseminated metastases secondary to this neoplasm present a challenging problem.

Regression of cutaneous metastases after treatment with triethylenethiophosphoramide in patients with disseminated mammary cancer was first reported by Shay. The authors' observations confirmed Shay's work and encouraged them to extend their series of patients. The report concerns 122 cases of far advanced mammary cancer treated for one to twenty-four months with this drug. The youngest patient was 26 years old, and the oldest was 85. Thirty-eight patients were in the fifth decade of life; there was progressive diminution in number in each subsequent decade.

When prolonged palliation of mammary carcinoma is indicated, especially with extensive disease (but not limited thereto) and without regard to prior therapy, the phosphoramide drugs may be useful. Medicaments may be administered by various routes to effect application within the tumor, and also orally, to suit the need of the patient. The ability to use the drug on an outpatient basis, even for extensive disease, provides an economic and psychic advantage to the patient, concurrent with the objective advantage of the patient's response. Hematopoietic depression occurring as a side effect also serves as a guide in determining the dosage.

EDMUND LISSACK, M.D.

Surgical Management of Carcinoma of the Cervix. Kelso, J. W., Surg., Gynec. & Obst. 103:565, 1956.

This report summarizes an experience of ten years in the surgical management of cancer of the cervix. After ten years' experience, the author is convinced that surgical therapy does have a place in the treatment of this disease, for two logical reasons: 1. The salvage rate is as good as that observed in patients treated by other methods or better. 2. The psychic effect upon the patient is far more powerful and realistic in patients managed surgically than in those treated by irradiation.

The results in patients operated upon five or more years ago have been compared with statistical reports of other clinics and found satisfactory.

The cases of nodal metastasis, in which 60 per cent of the patients have survived five years, warrant serious consideration.

The comparative figures speak for themselves and have encouraged the author in the conviction that surgical management of carcinoma of the cervix is the treatment of choice.

EDMUND LISSACK, M.D.

Peptic Ulceration and ABO Blood Groups. Buckwalter, J. A.; Wohlwend, E. B., Colter, D. C.; Tidrick, R. T., and Knowler, L. A., J.A.M.A. 162:1215, 1956.

Editors' Summary,—"The incidence of the four blood types O, A, B, and AB was studied in 1,301 patients with duodenal ulcer, 469 with gastric ulcer, and 69 patients with both gastric and duodenal ulcers. The three distributions so obtained were compared with the distribution found in a reference of 8,767 people without ulcers. Type O was more frequent among the ulcer patients than in the reference group, and calculations of probability showed that the association between type O and peptic ulcer was statistically significant. It was shown not to be secondary to any influences of sex, age, rhesus blood type, or occupation. Among a group of 529 patients who had histamine tests, however, the frequency of type O was significantly greater among those who reacted with an increase of free hydrochloric acid than among those in whom no increase of acid occurred."

HENRY J. ROSEVEAR, M.D.

Ophthalmologic Surgery

Enucleation with Integrated Orbital Implant

N. A. KARAKASHIAN, M.D., F.A.C.S., F.I.C.S.
PHILADELPHIA, PENNSYLVANIA

THIS report relates five years' experience in evaluating a new integrated orbital implant in 24 patients. Its development, of course, owes much to the pioneering effort of Ruedeman, Cutler, Hughes and others. This implant (Figure 1) is made up of vitallium, a casting alloy consisting of chromium, cobalt and molybdenum, that rarely causes tissue reaction and is widely used in orthopedic and dental work. Because of its relative inertness, the alloy seemed to offer promise of overcoming the problems encountered with various plastics, metals and combinations of these materials. The size of the implant is important, since implants 14 mm. or larger not only are too heavy, but offer reduced motility. This implant is 13 mm. in both height and width. Its design, evolved through trial and error, and with the assistance of Austenal Laboratories, is simple in construction. In the hollow sphere there are numerous large openings, which serve two purposes: first, they facilitate suturing the implant to the tissue; second, they permit loose orbital tissue to pass through the openings and grow into the implant in such a way as greatly to reduce the likelihood of extrusion. To promote better adhesion of tissue to metal, the surface of the implant is left unfinished.

Ordinary silk, cotton and catgut sutures were found unsatisfactory, since they often disintegrate before the implant is firmly attached to the surrounding tissue. With the assistance of Davis & Geck's research department, nylon was found satisfactory, since nylon sutures usually remain intact for twelve to eighteen months. The technic is simple and seldom requires more than thirty minutes. After separation of the conjunctiva and tenon's capsule from the anterior eyeball, the individual rectus muscles are located, dissected and held with sutures or hemostats. After removal of the eye, gelfoam is placed and held under pressure in the cavity. Next, the implant, on which four nylon

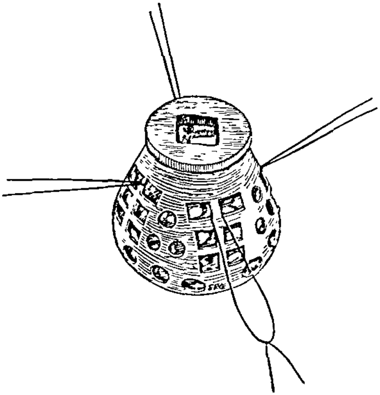

Fig. 1.—Karakashian vitallium implant.

Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-13, 1956.

Submitted for publication Sept 23, 1956.

Congenital Abnormalities of the Gallbladder; 101 Cases. Flannery, M. G., and Caster, Milton P., Surg., Gynec. & Obst. (Internat. Abst. Surg.) 103:439, 1956.

Congenital abnormalities of the gallbladder and cystic duct with a normal hepatic and common duct system are classified in this article, which includes a detailed review of 101 cases reported since 1936, up to which time a total of 158 similar cases had been collected and reviewed by Robert E. Gross. Such congenital abnormalities have been reported with increasing frequency during each decade, and it is expected that they will be more frequently encountered with the continued increase in biliary operations on an increased number of aging patients.

It is important to observe that the presence of any congenital abnormality of the gallbladder does not indicate that a higher incidence of abnormality will exist in other systems. In none of the present series of 101 cases were any additional congenital abnormalities reported.

In the body of the article the various items in the classification are separately dealt with and further subdivided to facilitate description.

The almost complete failure to detect congenital abnormalities at the autopsy table as compared to the operating table has raised the thought that congenital abnormalities *per se* tend to inflammation and lithiasis. In the past two decades abnormalities have continued to be reported primarily by surgeons, but more are now being observed by radiologists under circumstances that do not warrant surgical exploration.

Included in the present review are 25 cases of double gallbladder, i.e., a duplication in which there are two separate cavities, each of which has its own cystic duct. This type is further subdivided into three sections, depending on the direction and termination of the two ducts.

In the case of Moore and Hurley, exploration was carried out in spite of a normal-appearing gallbladder on roentgenographic study, after five bouts of acute pain in the right upper abdominal quadrant. A double gallbladder was encountered; one organ revealed acute and chronic cholecystitis, and the other was normal. It was possible in this case to remove only the abnormal component.

Only 5 reports of bilobular gallbladder observed in the past two decades were discovered by the authors for study and inclusion in this report.

In a single case, hourglass gallbladder was recognized preoperatively by cholecystographic study of a 44-year-old white man, in whom operation revealed lithiasis and chronic cholecystitis limited to the distal portion of the organ.

The Phrygian cap is now generally regarded as probably the most common congenital abnormality of the gallbladder. Its incidence is high, ranging from 2 to 6 per cent of all the cholecystographic studies performed in various large series. The high percentage of patients with a Phrygian cap will have normal gallbladder function, so that the presence of the cap or septum *per se* does not warrant surgical intervention. It is expected, however, that stones will develop in a higher percentage of these gallbladders.

Diverticulum of the gallbladder, 10 cases of which are documented in this article, has been confused with various sinuses, pouches and ducts in which calculi are frequently present. The question whether the diverticula are acquired or congenital is still in doubt. In the recently tabulated cases the great majority were sufficiently symptomatic to warrant surgical treatment. Although it is possible for the gallbladder to be normal and for the diverticulum to be the only pathologic condition present, it is quite unlikely that additional disease will not be discovered.

Absence of the gallbladder was encountered in 31 reports during the preparation of this article. Although extremely rare, the possibility of this anomaly may arise during the course of any biliary operation. Obviously, the correct preoperative diagnosis has never been made. Whenever congenital absence of the gallbladder is suspected during surgical exploration, a detailed and skillful surgical procedure is necessary, culminating, in all probability, in prolonged drainage of the common duct with a T tube. Operative analysis, particularly gain entrance by penetrating the floor of the space. Proximally, the interdigital subcutaneous spaces communicate with the most superficial layer of the central plantar space I *along the tunnels for the* digital nerves. Distally each space communicates beneath the superficial transverse plantar ligament with the corresponding web space. A collar-stud abscess, with one abscess cavity lying within the calloused skin and the other occupying an interdigital space, is present occasionally.

Infection of one of these spaces is most common amongst coolies and others who work barefooted, especially in urban areas. Often the patient states that a sharp stone, a nail or a thorn has penetrated the sole. At other times the cause is infection via the lymphatics from an infected crack in the calloused skin overlying the space. Rao and Kini reported that in 19 of 23 cases the infecting organism was Staphylococcus aureus.

Diagnosis: The patient complains of increasing pain between the shafts of the two metacarpals that bound the infected space. Soon he is unable to walk, and the general reaction is moderately severe. Exquisite tenderness over the infected space proclaims the diagnosis. When the pus has decompressed itself into the dorsal subcutaneous space, localization is more difficult.

Treatment: Drainage must be placed away from the weight-bearing area of the sole. The best incision is that used for drainage of a web space (see Fig. 3). A hemostat is directed into the cavity filled with pus, and its jaws are opened. Tube drainage is required. In the case of a collar-stud abscess, both pockets must be drained separately through the same cutaneous incision. When pus has burrowed posteriorly through the apex of the space, an incision or a counterincision is made in the line of the digital nerve in the pliable non-weight-bearing skin of the fore part of the instep. When an extension into the dorsal subcutaneous space has occurred, a counterincision is required in the line of

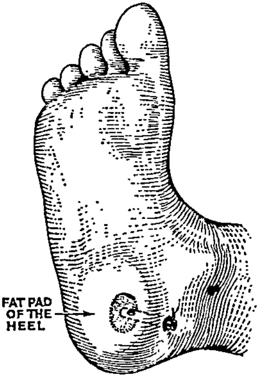

Fig. 2.—Drainage of an abscess of the heel space. The incision is placed above the calloused skin covering the heel.

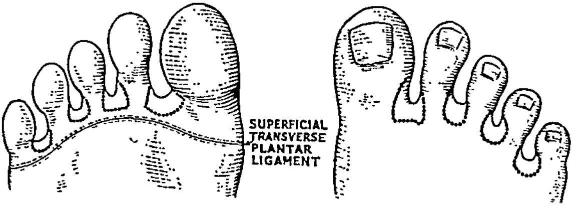

Fig. 3.—The web spaces, showing the extent on the plantar and dorsal aspects of the foot.

severe toxemia, pyrexia (temperatures from 103 to 104 F.), lethargy verging on coma and serious alterations in blood chemical values were observed in 13 patients. Remote complications of arthritis, affecting the large joints —especially the knee; cutaneous lesions, such as erythema nodosum, pyoderma gangrenosum, herpes labialis and stomatitis, were encountered. Ocular complications, such as corneal ulceration and iritis, was occasionally present. Venous thrombosis occurred preoperatively in 5 patients.

Obstruction is a common complication immediately after ileostomy. The complications of ileostomy include prolapse, recession, stenosis and fistula. Both prolapse and recession are due to detachment of the mesentery where it has been fixed in the paraileal gutter, except when the prolapse is part of an incisional hernia. Stenosis has been largely prevented by eversion of the mucosa with suture to the skin. skin.

A follow-up extending to five years and longer of more than a third of the survivors indicates that ileostomy should no longer be dreaded as an impediment to full, normal life; indeed, it restores patients with ulcerative colitis to full work, full weight and an enjoyment of ordinary pastimes. In about half the patients the diet has to be restricted slightly. Ileostomy patients regard their ileostomies as satisfactory.

Resection and anastomosis with preservation of the anal sphincter has been less satisfactory in this series. This method is not recommended as a routine, and its indications are limited; indeed, it is precluded for rectal hemorrhage and perforation, two of the complications encountered in this series.

HENRY J. ROSEVEAR, M.D.

Treatment of Arteriosclerotic Occlusive Disease in 101 Lower Extremities By Arterial Homografts. Crawford, E. S., Creech, O. Jr., Cooley, D. A., and DeBakey, M. E., Southern M. J. 49:665, 1956.

The authors report a surgical experience with 101 extremities with arterial insufficiency in which by-passing arterial homografts were inserted. Successful results were obtained in 92 per cent, and amputation was necessary in only 2 cases. The authors estimated that amputation was prevented in 18 cases by the use of this technic.

This direct attack upon the problem of the ischemic extremity with the objective of restoring pulsatile blood flow through the main arterial channel is the outcome of arteriographic study of such extremities which has revealed that the occlusion is often segmental, with a sizeable patent segment existing both proximal and distal to the occlusion.

The older methods of treatment, consisting of lumbar sympathectomy, amputation or endarterectomy, have been much less satisfactory than arterial replacement and by-passing procedures in which venous autografts or arterial homografts are used. In the present series of cases, demonstration of a patent segment of artery both distal to the occlusion and proximal to the bifurcation of the popliteal artery was considered an indication for operation. When intermittent claudication was the only indication of inadequate circulation, an operable distal segment was discovered in about 75 per cent of the cases, whereas in patients with inadequate circulation at rest, the incidence of operability was approximately 55 per cent. Operable distal segments have been demonstrated in extremities with superficial gangrene, ulceration and severe atrophy of soft tissue. The incidence of operability in diabetic patients is only slightly less than in the nondiabetic, and if the same criteria of selection are used for these patients the results are essentially the same. If local conditions as demonstrated by arteriographic study are favorable, all patients are operated upon, and grafts are inserted unless advanced or renal disease is present. If amputation is impending, the grafting procedure is usually employed in order to avoid amputation.

Early in this series the operative technic consisted of complete excision of the short, discrete occlusive segment and replacement by a homograft sutured end to end to the host artery. More recently, however, no attempt has been made to excise the involved vessel, the occluded segment being bypassed by an arterial homograft sutured end to side into the artery proximal and dis-

After-Treatment: Rest on a back splint, with the leg raised on pillows or, preferably, swung in a Bloxham's cradle, is maintained for two or three days, or until the pulse and temperature are normal. The patient should then be taken to the operating theatre and the wound or wounds packed lightly with petroleum gauze. A plaster cast is then applied. After the patient has been returned to bed, the limb is again elevated. Fixation in plaster is most important; otherwise contractures are liable to occur, resulting in a considerable deformity of the foot that is most difficult, or even impossible, to correct. After ten days or a fortnight, unless there is some indication for doing so before, the plaster cast is removed and renewed. The patient can be ambulatory during this period, but the cast should be retained until the wound has healed. After removal of the plaster edematous swelling is prone to occur and is most disabling; for, although it is not usually associated with much pain, the increased size of the foot makes it impossible to wear an ordinary shoe. Swelling can be prevented by the application of an Unna paste bandage to the foot and leg immediately after removal of the cast. The bandage must extend from the base of the toes to the tuberosity of the tibia, and it should be kept on for six weeks or longer if the tendency to swell is persistent. When the bandage becomes dirty, it is changed. In due course an orthopedic shoe will be required in most cases.

Drainage of the Lateral Plantar Space: To evacuate pus from the lateral space the incision shown in Fig. 7 is employed. The incision passes through the skin and subcutaneous tissue, and the space is opened widely by incising the deep fascia. Corrugated rubber drainage is provided.

Drainage of the Medial Plantar Space: The incision is almost the same as that advised for the central plantar space (see Fig. 5), but it should be made a little more toward the plantar aspect of the foot and over the site of maximum tenderness. To summarize, it should be the rule always to evacuate pus from the plantar aspect of the foot through an incision over either the medial or the lateral border of the foot. Such incisions not only provide adequate drainage but insure that the subsequent scar is well away from the weight-bearing area.

Infections of the Dorsum of the Foot.—The dorsal subcutaneous space is usually infected by an extension of infection from a subcutaneous interdigital space or a web space. Occasionally localization of infection occurs in the space, when infection spreads from the sole to the dorsum by way of the lymphatics; such localization is always distal to the dorsal venous arch. The incision should be placed in the line of the vessels or nerves, in order to avoid them.

The dorsal subaponeurotic space can be infected from direct puncture; it can also be involved from an extension of infection from plantar space IV. When infection of this space is suspected, aspiration should be attempted and the diagnosis confirmed before the incision is made. A longitudinal incision is then made alongside the needle The cavity is drained with corrugate rubber for twenty-four hours.

SUMMARY

The author lists as infections of the foot the following conditions: infected blister; paronychia; infected adventitious bursa associated with a corn; infected bursa over a hallus valgus; terminal pulp space infection; suppurative tenosynovitis; infection of the interdigital subcutaneous spaces, the heel space, the web spaces, the deep fascial spaces of the sole, the central, medial and lateral plantar spaces the dorsal subcutaneous space and th

technic and results. Eighty-nine per cent of 10,098 spinally anesthetized patients were followed for six months to five years without revealing severe progressive neurologic disease.

The major share of the lesser sequelae are related to lumbar puncture and are largely preventable by careful technic. Certain minor neurologic defects were noted, but none was progressive or of any consequence. These, in the authors' opinion, can be kept to a minimum by attention to asepsis and choice of reliable local anesthetics.

Selection of patients is important. Diseases of the central nervous system and the spinal column are contraindications. To 11 patients with preexisting neurologic disease spinal anesthesia was given inadvertently, and these, with 1 other case, form the basis of this present report. From 1948 to 1951, patients given spinal anesthesia at the Hospital of the University of Pennsylvania were interviewed preoperatively for suitability to the anesthesia chosen. During anesthesia the details of lumbar puncture, the anesthetic given and the results obtained were recorded in every case. After anesthesia the patients were seen consistently and questioned for specific complications. Six months later a questionnaire was sent to all, and the returns were screened for replies indicating the onset of neurologic disease. Subsequently, many personal interviews and physical examinations were done. In a case of previously present but symptomless meningioma of the spinal cord the lesion produced symptoms in the immediate postoperative period. Lack of alertness early and, later, preoccupation with the idea that spinal anesthesia might be responsible delayed diagnosis and curative treatment.

The differential diagnosis of arachnoiditis and tumor of the spinal cord are accurately set forth. Two cases in which viral diseases of the central nervous system were present consisted of 1 in which an acute infection, herpes zoster, and another in which there was a history of mumps encephalitis, are vividly discussed. The case headed "Degenerative Disease of the Central Nervous System" is one in which former cerebrovascular accident was the most likely cause of postanesthetic symptoms.

Spinal anesthesia is also to be avoided in cases of combined sclerosis, disseminated sclerosis, syphilis and amyotrophic lateral sclerosis. Leg cramps following spinal anesthesia have been shown by control series to be no greater than those occurring after general anesthesia. Backache and sciatic pain are common complaints after both general and spinal anesthesia. When followed by sciatic pain, backache becomes a potential neurologic problem, since there may be protrusion of an intervertebral disc and compression of a spinal nerve root. Three cases with a common pattern are reported; in all 3, backache and sciatica recurred after spinal anesthesia. The patients, questioned again after anesthesia, admitted that they had had back pain before. All probably had protruded intervertebral discs.

Unsuspected metastasis to the spine may be present when spinal anesthesia is given, and symptoms may be heightened by a lumbar puncture. Two cases of this type are reported.

Operations on diabetic patients are often performed with spinal anesthesia, since it is a method that adds little to the existing metabolic imbalance. The diabetic patient, however, often has complicating disease. Old age, vascular disease and peripheral neuropathic conditions are accompanied by neurologic signs and symptoms that may be confused with the complications of spinal anesthesia. Meningitis has ceased to be a problem in spinal anesthesia, since understanding of the need for an aseptic technic has increased. No case of meningitis directly associated with anesthesia was encountered, but in 1 case meningitis arose twelve days after diagnostic spinal anesthesia in a patient with purulent otitis media.

Reference is made to the experimental work of Weed and others, who were able repeatedly to produce experimental meningitis in several animal species by performing occipital or lumbar puncture within five hours of injecting pathogenic bacteria intravenously. Meningitis began not at the spinal puncture site but intracranially, and the injected bacteria were recovered from the subarachnoid space. Perhaps the spinal puncture established an area of lowered resistence to infec-

An Orthopedist Looks at Collagenous Tissue Diseases

HARVEY E. BILLIG Jr., M.D., F.I.C.S.

LOS ANGELES, CALIFORNIA

PHYSICAL reactions in the morning are highly relevant to fibrous tissue, for at that time one tends to be a little "stiffer" than on the night before. Over night there is a tendency to "tighten up" with the relative inactivity of the body. The morning impulse to "loosen" results in a stretch, a yawn and, in the more ambitious, setting-up exercises. The limber cat finds itself arising and stretching periodically, even though it may then resume its nap.

Early in the study of anatomy and histology one is struck by the remarkable prevalence of collagenous tissue in the body, together with its extensive fibrous tissue sheathings surrounding the cells, groups of cells, tendons and organs, and ramifying as fascial planes and ligaments. The intricate relation of nerves, blood vessels and lymphatics wending their way through and by these fascial planes is a wonder to behold.

Time was when these collagenous tissue structures, together with bone, cartilage and teeth, were regarded as inert substance laid down within the body and not subject to the laws of living biologic substances. It is now known that these are truly living structures, constantly functioning in accordance with biochemical and physiologic principles; therefore, a better understanding of their function is possible. The knowledge that there is a constant living physiologic chemical exchange and replacement of the elements that make up these tissues enables one to apply genetic principles, laws of mechanical force, the effects of metabolic endocrine modulation, nutritional factors (vitamins, amino acids, minerals, etc.)[1] and Bernard's pharmacochemical together with Langley's autonomic balancing[2] to these, as well as the other tissues of the body.

In the presence of certain androgenic endocrine deficiencies the vertebrae demineralize as senile osteoporosis[3] with an increasing dorsal round back and pathologic compression fractures due to the weakened bony structure of the bodies. In the presence of hyperparathyroidism the generalized demineralization, with scattered localized fibrocystic areas, demonstrates a profound physiologic change of the bone physiology under an altered metabolic influence. In the same way, the collagenous fibrous tissues that make up tendons, ligaments, fascia and other connective tissues are to be regarded as living dynamic tissues.

Hisaw[4] in 1926 published an article concerning the relaxation of the pubic ligaments of the guinea pig, showing the effect of endocrine balance on fibrous tissue and pointing the way toward understanding of the cyclic nature of shortening and lengthening of fibrous tissue with the estrus cycle and the loosening of joints at parturition to allow the pelvis to spread, thus increasing the size of the birth canal. The theoretical substance "relaxin," elaborated as a result of metabolic balance,

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From the Billig Clinic, Los Angeles.

Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-13, 1956.

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Un comité a été nommé pour l'examen des articles à paraître. Les auteurs sont priés de joindre à leur travail de brefs résumés en français, anglais, allemand, espagnol, italien et portugais si possible.

the sensory (external and internal) system feeds into the brain the stimuli, which are then transmitted to the hypothalmus; this, in turn, exercises a control over the pituitary, which, in its own turn, elaborates the specific glandular trophins (thyrotrophin, adrenal cortical trophin, gonadotrophin, etc.), which circulate via the blood stream to the particular glands and stimulate their endocrine production. These endocrines then circulate to all the tissues of the body, exercising their particular share of control of the enzymatic chemical reactions of metabolism.

Colchicine,[14a] for many years a standard remedy for gouty arthritis and often taken as wine of colchium, has recently taken on an extensive and exciting new significance. Enzymatic chemical research on fibrous tissue has made wide use not only of fibroblast cultures but of the spindle fibers formed in the metaphase of mitotic cell division. The effect of colchicine[14b] in inhibiting the fibrous contractile mechanism of the spindle is startling. When this effect is present, the synergistic effect of the steroid hormones is pronounced, although they themselves do not have this power. Other substances that produce this colchicine-like effect are now known, although they are not nearly so effective, and it is postulated that the body normally elaborates, or at least utilizes, substances to provide this colchicinoid mediative effect. It has been shown that adenosine-triphosphuric acid (ATP[14b]) is probably indispensable to fibrous contraction of the spindle fiber, and that the colchicine acts on the cell by modifying this mechanism.[15] The role of steroid activity in this direction has been extensively studied by Katzberg of the University of Oklahoma Medical School.

The use of colchicine to enhance the mediative effect in steroid therapy for the correction of fibrous contractures in cases of collagenous tissue disease has wide application, and, in many instances, the patient can be "trailed off" steroid therapy to the maintenance dose of colchicine (daily divided doses in amounts just short of producing gastrointestinal symptoms) without fear of recurrence of contracture, so long as this maintenance dose is continued. Return of aching in joints and "stiffness" observed within a couple of months after the maintenance dose is interrupted are frequent. At the Billig Clinic there are constantly returning patients, not seen for several years, who had decided, against advice, that they were "well" and the maintenance dose of colchicine was no longer necessary and then had noticed, within two months after discontinuing it, a recurrence of symptoms. Such patients rarely need a second "lesion." Certain of the synthetic steroids seem to cause pronounced further depression of the patient's own production of adrenal cortical steroids so that, upon discontinuance of the synthetic steroids (because of other side effects; Cushing's, etc.), there are recurrent symptoms more severe than the original ones. The administration of ACTH and testosterone to these patients, as a means of stimulating recovery of the adrenal cortex, is indicated but is not always especially successful. These patients tend to present a fixed aggravation-intolerance psychic attitude that does not clear up.

As has been pointed out, the fundamental tendency of fibrous tissue is to contract, shorten and form contractures reducing the range of motion unless this tendency is opposed. The cat remains agile from frequent stretching. Volkman's ischemic contracture, contraction of the gastrocnemius and soleus muscles, "shortening" of the achilles tendon and the scalenus anticus syndrome are examples of pronounced shortening of muscles due to fibrocytic contracture of the fibrous elements of the muscle to include muscle

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Bibliographic references should follow the style of the Quarterly Cumulative Index Medicus of the American Medical Association. All tables, charts and illustrations should be *loose, not attached to pages of text material.*

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Fracture-Dislocation of the Talus with Posterior Displacement of the Body and Avascular Necrosis

I. W. DAVIDSON, B.A., M.D., F.R.C.S. (Can., Edin.), F.I.C.S.

AND

W. J. McCRACKEN, M.D., F.R.C.S. (Can.)

SUDBURY, ONTARIO, CANADA

SOME 17 cases of fracture-dislocation of the talus, a rather infrequent injury, have been reviewed in the hope that some new light might be shed on the management of this most serious type of injury and complication. It must be emphasized that this article is a preliminary report, presenting the authors' ideas concerning treatment in an attempt to improve the results. Several cases will be presented in which these ideas have been carried out to justify their presentation at this time.

Anatomic Background: Ankle Mortise.—The talus is intra-articular. Three-fifths of the surface is covered with articular cartilage, and the structure takes part in the formation of three joints: the ankle, the subtaloid joint and the mid-tarsal joints (talonavicular). The talus is a hinge joint, and only in extreme of dorsiflexion does it fully occupy the ankle mortise.

In normal weight bearing relatively no force is transmitted from the heel or forefoot through the center of the talus to the center of the ankle joint. Practically all of the force is taken up by the gripping action of the external fibular and medial tibial malleoli through the sides of the talar body by means of complex ligaments of the ankle joint.

Mode of Production of Injury (Anderson). — The accompanying illustration shows the third degree of a dorsiflexion injury which begins as follows:

1. The neck of the talus is impacted against the anterior edge of the lower end of the tibia, producing a vertical fracture of the neck of the talus.

2. Force is further transmitted from the neck of the talus to ligaments of the posterior part of the subtaloid joint, causing subluxation of the foot forward on the body of the talus and a posterior subtaloid dislocation.

3. The foot continues in dorsiflexion and supination. The displacement continues, and the medial surface of the tuberosity of the calcaneus comes to lie under the body of the talus. While in this position the sustentaculum tali of the calcaneus locks in front of the medial tubercle of the body of the talus. Rarely, pronation causes lateral and posterior displacement of the body.

When violence ceases and the foot is in plantar flexion, the locked body of the talus is displaced backward out of the tibiofibular mortise. It lies on the medial surface of the tubercalcanei, with the fractured surface directed laterally, the trigonal tubercle medially and the medial tubercle hooked behind the sustentaculum tali.

Avascular Necrosis.—It is interesting to note that, in this series, avascular necrosis was absent in all cases of fractur he

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gether with early ambulation, the fracture will unite solidly, the process of revascularization will not be harassed, good functioning ankle joints will be obtained (certainly in many cases). Subtaloid fusion, therefore, can be reserved for subsequent painful arthritic changes in the joint, replacing the common combined or triple fusions performed in past years unless other factors, e.g., fracture of the lower end of the tibia with ensuing arthritis, necessitate ankle fusion. If excision of the talus should be necessary, it would seem obvious that it should be combined with tibial calcaneal fusion early.

We hope that these observations will be accepted as a preliminary, provocative report. Too few cases have been followed under this regimen to be conclusive, but up to the time of writing they encourage us to continue with the principles of treatment as enumerated, possibly returning with a more comprehensive report in another five to ten years.

SUMMARY

Eighteen cases of fracture-dislocation of the talus, a rather infrequent injury, are being reviewed in the hope that some new light may be shed on the management of this serious injury and complication.

Early open operation and early ambulation (as soon as there is evidence of consolidation of the fracture site with an early zone of revascularization beyond the fracture line) are two of the important points in the management of this condition, since they reduce the period of disability. Anatomic studies of the blood supply of the talus are included, and evidence that early fusion of the ankle and subastragaloid joints does not accelerate the revascularization process is added. In certain cases, however, arthritis of the subastragaloid joint arthritis developed later, necessitating a subastragaloid fusion, but the ankle joints remained mobile. If excision of the talus is necessary it should be combined with tibial calcaneal fusion.

RESUMEN

18 Casos de fractura-lujación del calcáneo, accidente poco frecuente, se revisan con la esperanza de dar alguna luz en el manejo de este serio accidente y sus complicaciones.

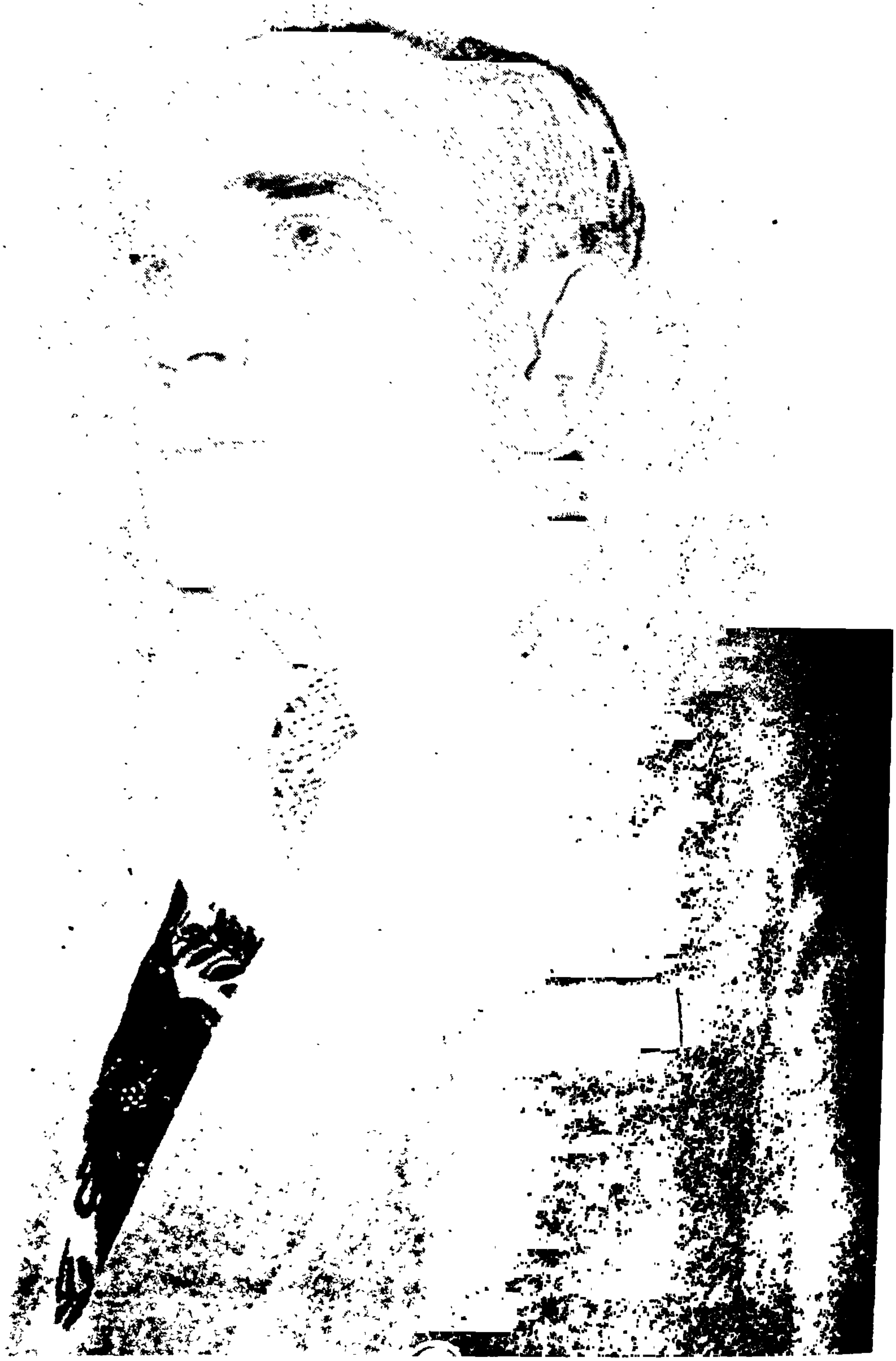
Una operación abierta precoz y ambulación precoz (tan pronto coma haya evidencia de consolidación del punto de fractura con una temprana zona de revascularización más allá de la línea de fractura) son de los más importantes puntos en el manejo de esta condición, ya que reducen el período de incapacidad. Estudios anatómicos del suplemento sanguíneo del calcáneo están incluídos y se agrega la evidencia de que la fusión precoz de la articulación del talón y subastragalina no acelera el proceso de revascularización.

En ciertos casos sin embargo, se desarrolló una artritis de la articulación subastragalina—con fusión de dicha articulación, pero el talón permaneció móvil—Si la resección del calcáneo es necesaria, debe combinarse con fusión tibio calcánea.

ZUSAMMENFASSUNG

Es liegt eine Untersuchung von 18 Fällen von Bruch und Verrenkung des Fersenbeins vor. Der Verfasser hofft, neues Licht auf die Behandlung dieser ziemlich seltenen aber schweren Verletzung und ihrer Komplikationen werfen zu können.

Frühzeitiger chirurgischer Eingriff und frühzeitige Bewegung des Kranken (sobald sich eine Festigung der Bruchstelle und die Wiederherstellung des Blutkreislaufs in der Umgebung der Bruchlinie nachweisen lassen) sind zwei der wichtigsten Punkte in der Be



His Excellency Don Adolfo Ruiz Cortines, Constitutional President of the United States of Mexico and Honorary President of the Tenth International Congress of the International College of Surgeons.

ginning at its anterior extremity. Even though the focus can be severed from the surrounding healthy structures, there will not be sufficient normal footplate left for adequate function. The third type consists of involvement of the entire footplate area. In such cases the disease has usually penetrated into the vestibule (Fig. 1*C*). This is not amenable to any kind of treatment; a good result is not possible.

It would appear that any reasonable method of attack upon the stapediovestibular region would yield the same result in a given case, because the break is bound to come at the point of least resistance. The fracture of the crura so frequently mentioned is simply severance of the crura from the focus involving the footplate. The basis for this is the well known law that when two structures are joined together, the substance of each by itself (the bone of the footplate and crus, and the spongiose bone of the focus) is stronger than the point of contact between them.

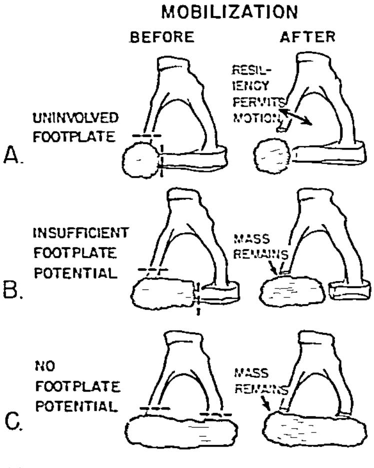


Fig. 1.—Three types of otosclerotic foci. *A*, ideal for employment of technic described; *B*, questionable to completely unsatisfactory; *C*, completely unsatisfactory.

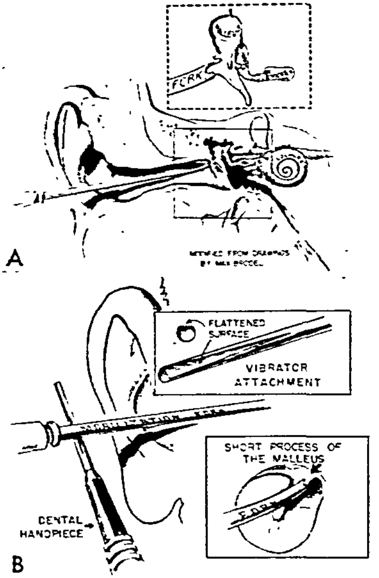

FORK
A
MODIFIED FROM DRAWINGS BY MAX BRODEL
FLATTENED SURFACE
VIBRATOR ATTACHMENT
SHORT PROCESS OF THE MALLEUS
FORK
DENTAL HANDPIECE
B

Fig. 2.—*A*, sketch showing relations of aural structures (frontal view) and placement of forked instrument upon short process of malleus. *B*, rotating flattened rod in contact with shaft of forked instrument to generate vibrations.

If what has just been said is true, it follows that the simpler and less involved the procedure, the better. A procedure of this kind was described in a recent paper.[23] It consists of the placement of a forked instrument firmly over the previously exposed incudostapedial joint. A rod flattened distally 0.014 inch, revolving at 9,000 revolutions per minute, is then brought in contact with the shaft of the fork. The vibrations so generated are sufficient to mobilize the stapes in selected cases.

It was reasoned that if vibrations origi-

Xipetotec, the tutelary deity of Aztec medicine, among whose special devotees were surgeons and silversmiths, and who was thought to have power over abscesses, tumors, and diseases of the eye. Florentine codex.

—Photo by courtesy of Prof. Manzanilla

stitutional President of the Republic of Mexico; Honorary Vice-Presidents, **Dr. Ignacio Morones Prieto**, Secretary of Public Health and Welfare; **Mr. Luis Padilla Nervo**, Secretary of Foreign Affairs; **Mr. Angel Carvajal**, Secretary of Government; **Mr. José Angel Ceniceros**, Secretary of Public Education; **Mr. Ernesto P. Uruchurtu**, Chief of the Federal District Department; **Mr. Antonio Ortiz Mena**, Director of the Mexican Institute of Social Security; **Dr. Nabor Carrillo**, Head of the National University of Mexico; **Dr. Raoul Fournier Villada**, Director of the School of Medicine; **Dr. Victor Fernández Manero**, Honorary Vice-President of the Third International Surgical Congress, held in Mexico, D. F., in 1941.

Arrangements Committee.—Members of the Arrangements Committee of the Tenth International Congress are: **Prof. Dr. Manuel A. Manzanilla**, Professor of the Surgical Clinic of the School of Medicine, President; **Dr. Raúl Arturo Chavira**, Professor of the Ophthalmologic Clinic of the School of Medicine, Vice-President; **Dr. Francisco Fonseca**, Professor of the Surgical Clinic of the School of Medicine, Vice-President; **Dr. Juan Mora**, Former Professor of the Surgical Clinic of the School of Medicine, General Secretary; **Dr. Manuel A. Manzanilla Jr.**, Instructor of the Surgical Clinic of the School of Medicine, Auxiliary Secretary.

Scientific Program Committee. — The committee in charge of organizing the scientific program of the Tenth International Congress is composed of the following persons: **Prof. Dr. Raoul Fournier Villada**, Director of the School of Medicine of the National University of Mexico, President, aided by **Prof. Dr. Raymond Darget** of Bordeaux, France; **Prof. Dr. Carlos Gama** of São Paulo, Brazil: **Prof. Dr. Francisco Graña** of Lima, Peru; **Prof. Dr. Arthur Hübner** of Berlin, Germany; **Prof. Dr. Felix Mandl** of Vienna, Austria; **Prof. Dr. Francisco Martín Lagos** of Madrid, Spain; **Prof. Dr. Henry W. Meyerding** of Rochester, Minnesota, U.S.A.; **Prof. Dr. Raffaele Paolucci di Valmaggiore** of Rome, Italy; **Prof. Dr. Jorge A. Taiana** of Buenos Aires, Argentina; **Prof. Dr. Max Thorek**, Founder of the International College of Surgeons and its Secretary-General, of Chicago, Illinois, U.S.A.

Scientific Activities. — Independent papers on topics of general interest will be presented at the general meetings as well as at the meetings of the specialized sections. There will also be four official themes and four subjects for round table discussions. Some of the independent papers will

Surgical Treatment of Diseases of the Parotid Gland

ORION H. STUTEVILLE, M.D., D.D.S., F.A.C.S.
CHICAGO, ILLINOIS

THERE are three large categories of disease of the parotid gland that may require surgical intervention, namely, inflammatory diseases, tumor and trauma. For the purpose of this article, inflammatory diseases and injuries will be described briefly and the treatment of choice indicated, while the treatment of benign and malignant tumors of the parotid gland will be discussed in some detail.

Some of the inflammatory diseases of the parotid that occasionally require operation are complications of mumps, obstruction of the parotid duct by calculi, acute parotitis and secondary involvement of the gland in tuberculosis.

The most common disease of the parotid gland is mumps. Mumps in itself does not require surgical treatment, but its complications occasionally produce conditions that need surgical treatment, as the following case illustrates.

REPORT OF CASES

CASE 1.—A 10-year-old boy had mumps several weeks prior to his presentation at the clinic. He complained of swelling of the side of the face, with pain. When pressure was applied over the swelling, which was in the parotid region, thick yellowish pus could be expressed from Stensen's duct. This was treated by dilation of the ducts and application of hot wet packs at home. Culture and sensitivity tests revealed that the organism was a staphylococcus, sensitive to penicillin and several other antibiotics. Penicillin was given, but the condition continued. After about two weeks' treatment the abscess area closed off and no longer was connected to the duct system. At this time incisional drainage was performed, and the patient made an uneventful recovery.

A second disease of the parotid gland that requires operation is obstruction of the parotid duct, or Stensen's duct, by calculi or inflammation. Obstruction of the gland's secretions may produce an inflammatory reaction and swelling. Secondary infection may result, with bacteria traveling up the duct and producing acute or chronic parotitis; also, the infection can be brought in by the blood stream.

CASE 2.—A 42-year-old man had a considerable swelling of the right side of the face, in the parotid region, of three days' duration. He was in extreme pain and was unable to eat, since any movement of the jaw increased the pain. Examination revealed a hard white mass at the orifice of Stensen's duct. The orifice was dilated and incised, and two stones, measuring 4 by 3 mm., were delivered. This was followed by copious drainage of thick yellow pus. The patient made an uneventful recovery and has had no further trouble.

CASE 3.—A 42-year-old Negro housewife was admitted to the hospital complaining of recurrent swelling in the left parotid region for the past eighteen years. During the past six months she had had constant swelling, with persistent drainage of thick yellowish material from Stensen's duct, considerable pain and a disagreeable taste in the mouth at all times. Examination revealed a pronounced swelling in the left parotid region, with drainage of thick yellowish pus from the left Stensen's duct when pressure was applied over the area. Exploration of the duct by means of a metal probe revealed it to be dilated. There were no foreign bodies or stones. Roentgen

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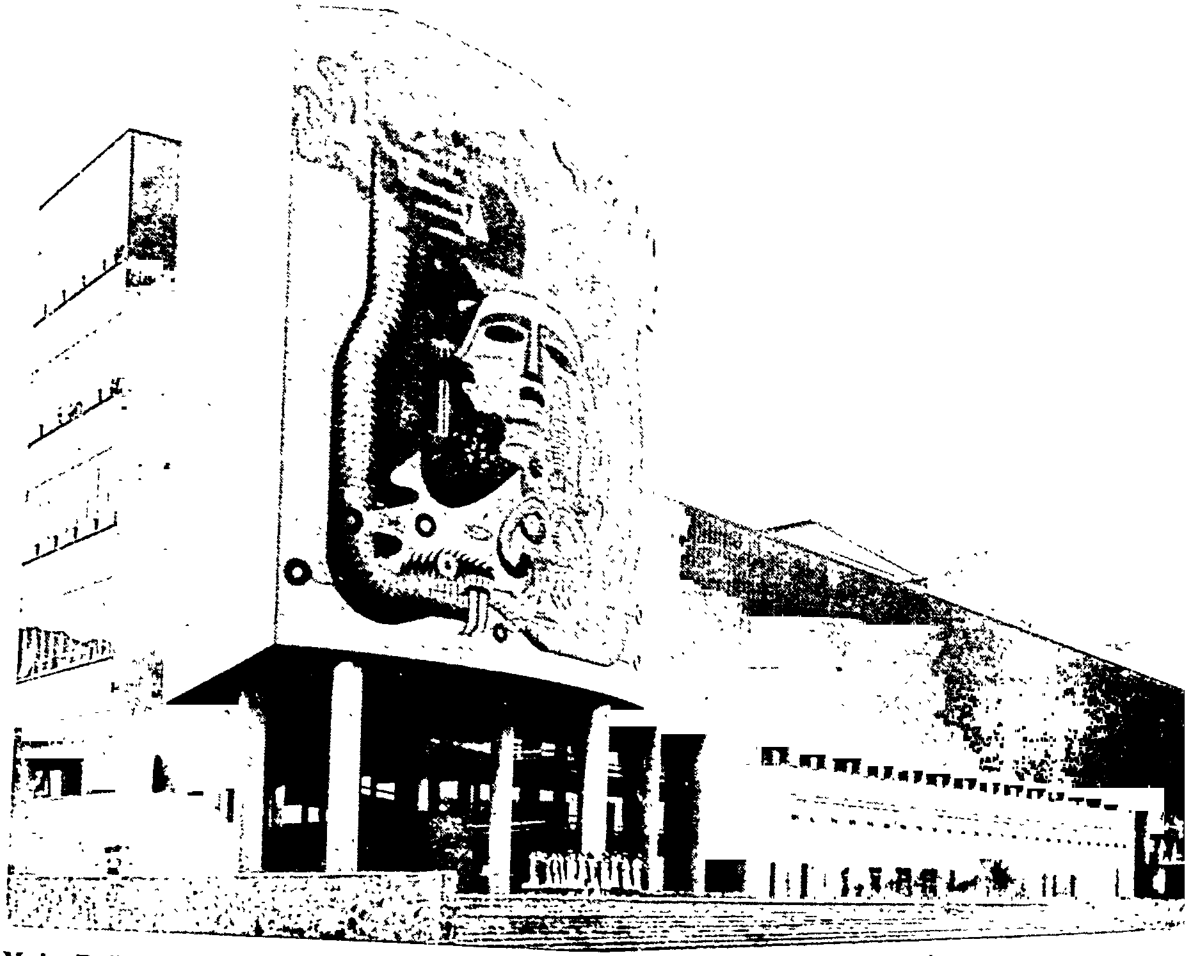
From the Maxillofacial Departments, Northwestern University; Evanston Hospital, Evanston, Illinois; Cook County Hospital and Passavant Hospital, Chicago, Illinois.

Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-13, 1956.

Submitted for publication Oct. 1, 1956.



Main Building of the Faculty of Medicine, National University of Mexico, University City, Mexic D. F., Mexico, where the Tenth International Congress will be held.

cussion. Presentation of papers will begin and end as scheduled. All papers must be presented by the author or by one of the co-authors. General assemblies, sessions of the specialized divisions, the film forum and routine film showings have been scheduled for Monday, Tuesday and Wednesday mornings from 8 to 10:15, followed by a forty-five minute intermission. Afternoon sessions will meet from 2 to 7:30 p.m., with an intermission from 4:30 to 5:15 p.m. The Thursday afternoon session will begin at 3 p.m. and continue until 7:30 p.m., with an intermission to allow for the viewing of technical and commercial exhibits.

Operating Schedules.—Demonstrations of operative technics will be held on the morning of February 28 (Thursday), fror 8 to 11 a.m. in the hospitals of Mexico Cit Tickets of admission to these session should be requested at the meetings of th respective surgical sections, as only a limited number of persons may be admitte to each operating room.

General Sessions.—The general sessions, covering topics in the field of general surgery as well as the four official presentations, will take place in the auditorium of the School of Medicine of the National University of Mexico.

Film Forum.—The film forum as well as the exhibition of auxiliary films will take place in two classrooms located on the lower floor of the School of Medicine, below the auditorium.

ameter. It was freely movable and not painful. The preoperative diagnosis was tumor in the accessory lobe of the parotid gland. An incision was made parallel to the duct and over the tumor. It was removed by excising the entire accessory lobe and dissecting it free from Stensen's duct. The pathologic diagnosis was muco-epidermoid carcinoma of the salivary gland. The wound healed well, and the patient has had no recurrences at the time of writing, five and one-half years after the operation.

CASE 10.—A 23-year-old white man was admitted to the hospital with a mass in the left parotid region, just below the lobe of the ear, in the region of an earlier surgical incision. The mass measured about 1 cm. in diameter. It was rather diffuse and was attached to the surrounding structures. A tumor had been removed from the area two years and four months earlier. The pathologic diagnosis at that time was muco-epidermoid carcinoma of the parotid gland. The entire left parotid gland was removed without injury to the seventh nerve. The mass was located in the superficial portion of the gland and appeared to be a scar formation rather than tumor tissue. A frozen section showed fibrous tissue and chronic inflammatory reaction of the parotid gland. Since there were no palpable nodes and no evidence of metastases, radical neck dissection was not performed. The wound healed well. Paresis of the lower part of the face appeared on the second postoperative day but cleared in about six weeks. The final pathologic diagnosis was chronic fibrosis of the parotid gland. No tumor has been observed on subsequent routine examinations, although the patient has been followed only for four months.

It must be remembered that there are other tumors involving the parotid gland that require surgical treatment. The other true parotid tumors are Warthin's tumor and oxyphilic adenoma. These are classified as benign tumors; nevertheless, they should be removed with a good margin of normal tissue. Tumors of any of the normal structures may also occur in the parotid region, such as hemangiomas, lymphangiomas, lipomas, fibromas, neuromas and tumors of the muscle tissue, and the diagnosis can be made only by removing the tumor and obtaining a histologic report. Metastasized tumors from other parts of the body also occur occasionally in the parotid region.

SUMMARY

There are three classes of parotid gland disease that require surgical treatment, namely, inflammatory disease, tumor and trauma. In the indivdual case, treatment ranging from simple drainage to wide block dissection, including radical neck dissection, may be necessary. Four types of inflammatory complications requiring surgical treatment are described: (1) complications of mumps; (2) obstruction of the parotid duct by calculi or inflammation; (3) acute parotitis, and (4) secondary involvement of the parotid gland in tuberculosis.

The discussion of tumors of the parotid gland includes (1) mixed cell tumors, both benign and malignant; (2) muco-epidermoid tumors, and (3) other benign tumors in the region of the parotid gland. (No attempt is made to break down the classifications of the malignant tumors of the parotid gland, except to separate the muco-epidermoid from the general classification.)

Injuries to the parotid region are discussed including injuries to the gland itself and to Stensen's duct.

CONCLUSIONS

Treatment of inflammatory diseases of the parotid gland requiring surgical intervention is accomplished by drainage, relief of obstruction or, in the case of tuberculosis with secondary involvement of the parotid gland, resection of the affected parts.

A fistula resulting from lacerations to the face and penetrating to S [illegible] ic

A priest imparting medical knowledge to a group of Aztec citizens. Mural of Chávez Morado in Ciba, of México, D. F.

—Photo by courtesy of Prof. Manzanilla

Tours.—Independent of Congress activities, the travel agencies collaborating with the Congress have planned a number of projects for those interested in participating. On Sunday, February 24, at 9 a.m., a sightseeing tour of Mexico City will begin directly after the ceremonies at the Column of Independence and will end at Constitution Square in time for the welcome ceremonies that will be held in the Palace of the Federal District Department. A three or four day trip will begin on Friday, March 1, the day following the closing of the Tenth International Congress. The official agencies handling the post-Congress tours are: **Antonio Perez, Avenida de la Reforma 133, first floor, Mexico 4, D. F.,** and, for the residents of the United States and Canada, the **International Travel Service, Inc., The Palmer House, 119 South State Street, Chicago 3, Illinois.**

Registration.—One may register for the Congress at the time one makes his travel arrangements, American and Canadian residents using the International Travel Service and residents of Central and South America using the services of Antonio Perez. One may also register directly with the Arrangements Committee, Apartado Postal 32311, Mexico 7, D. F. The registration fee is 250 Mexican pesos, or $20.00 in United States currency, for participants in the Congress. For persons accompanying Congress participants, the registration fee is 125 Mexican pesos, or $10.00 in United States currency. The registration

Plastic and Reconstructive Surgery

Cutaneous Carcinoma of the Nose and Ear

CHARLES C. GRACE, M.D., F.A.C.S., F.I.C.S.

ST. AUGUSTINE, FLORIDA

THE intensive educational crusade against cancer, which has held sway over the past decade, has made the public ever more alert in the recognition of this dread disease. As a direct result, more early cancers of the skin are recognized than ever before. It is the purpose of this paper to direct attention to a too seldom used method of dealing with early malignant lesions of the nose and ear that will produce cosmetic results and cures gratifying to both the patient and the surgeon.

A nose or an ear may not be architecturally perfect, but it is a portion of a person's physiognomy that is constantly on exhibition. It is, therefore, understandable that a patient is justifiably unhappy when a part, or all, of either organ is disfigured or destroyed by injudicious treatment.

The atrophy of the skin and the telangiectasis produced by roentgen rays and radium are not only deforming but in themselves dangerous. The areas subjected to this therapy can never again be exposed to the direct rays of the sun for any length of time. In addition, carcinomas of the skin may develop upon irradiated areas.[1] Martin and Stewart[2] and others have reported the highly malignant and invasive spindle cell epidermoid carcinoma arising from previously irradiated sites.

Role of Sunlight.—It is generally agreed that prolonged exposure to sunlight of high ultraviolet content may cause cancer of the skin. The races of mankind over hundreds of years have adjusted themselves to their zones of habitation, as may be noted in the ruddy complexion of the blond, blue-eyed Nordic, the darker skin of the Mediterranean peoples and the deeply pigmented skin of the Negro race from the equatorial regions of Africa. Ackerman and Regato[1] observed that carcinoma of the skin seems to develop after chronic exposure to solar rays much more frequently in average Scandinavians and North Germans than in persons with coarser or darker skin. It is well known, they added, that Arabs, South American Indians and Negroes are only slightly susceptible, and they ascribed the definite racial differences in susceptibility to the texture of the skin and its pigment content. Boyd[3] named exposure to bright sunlight as an apparent causal factor of basal cell carcinoma of the skin. He noted that the incidence of this disease is extremely high in Australia, where as many as 50 cases a day may be encountered in the outpatient department of a Sydney hospital. The conditions there are peculiar, for in that country with a tropical sun, especially strong light and low humidity, there is white labor only. In other tropical countries pigment-protected skins shield those continually exposed to the brilliant glare. The relative immunity of the large Italian element in Australia's labor population is

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Submitted for publication Sept. 23, 1956.

Decorative incision of the teeth and the ritual or medicinal bleeding (blood-letting) of the Aztecs. Mural of Chávez Morado in Ciba of México, D. F.

—*Photo by courtesy of Prof. Manzanilla*

James F. Dowd, St. Louis, Missouri; **Dr. Morris Friedel**, Chicago; **Dr. Hesiquio N. González** and **Dr. Philip S. Kline** of the Hospitals of Santa Rosa and Bautista, San Antonio, Texas; **Dr. Aaron N. Gorelik**, New York City; **Dr. Edwin J. Grace** of the Carnegie Institute of Experimental Genetics at Washington, D. C., and of the Cold Spring Biological Laboratories at Cold Spring, New York; **Dr. Earl J. Halligan** of the Medical Center of Jersey City, New Jersey; **Dr. Arnold S. Jackson**, Madison, Wisconsin; **Prof. Dr. Roland M. Klemme**, St. Louis, Missouri; **Dr. Claude N. Lambert**, Chicago; **Dr. Daniel H. Manfredi**, Misericordia Hospital, New York City; **Dr. Ross T. McIntire**, Executive Director of the International College of Surgeons at Chicago; **Dr. Henry W. Meyerding** of the University of Minnesota, Emeritus Professor of the Mayo Foundation and President-Elect of the International College, from Rochester, Minnesota; **Dr. Juan Negrín**, New York City; **Dr. A. Neal Owens**, New Orleans; **Dr. James M. Ovens**, Phoenix, Arizona; **Prof. Dr. S. L. Perzik**, Los Angeles, California; **Capt. Sam Pinkes, M.D.**, Fort Leonard Wood, Missouri; **Dr. Louis T. Palumbo**, Des Moines; Iowa; **Dr. Sidney A. Rosenburg**, Pittsburgh; **Dr. Peter A. Rosi**, Chicago; **Dr. Curtice Rosser**, President of the United States Section of the International College of Surgeons, from Dallas; **Dr. Carlo Scuderi**, Chicago; **Dr. Emanuel M. Skolnik**, Chicago; **Dr. G. Gordon Snyder**, Bryn Mawr, Pennsylvania; **Dr. Robert Tauber**, Philadelphia; **Dr. Horace E. Turner**, Chicago; **Dr. James W. Watts** and **Dr. José Humberto Mateos** of Washington, D. C.

Venezuela. **Prof. Dr. Carlos R. Travieso** and **Dr. Ricardo Baquero** of Caracas.

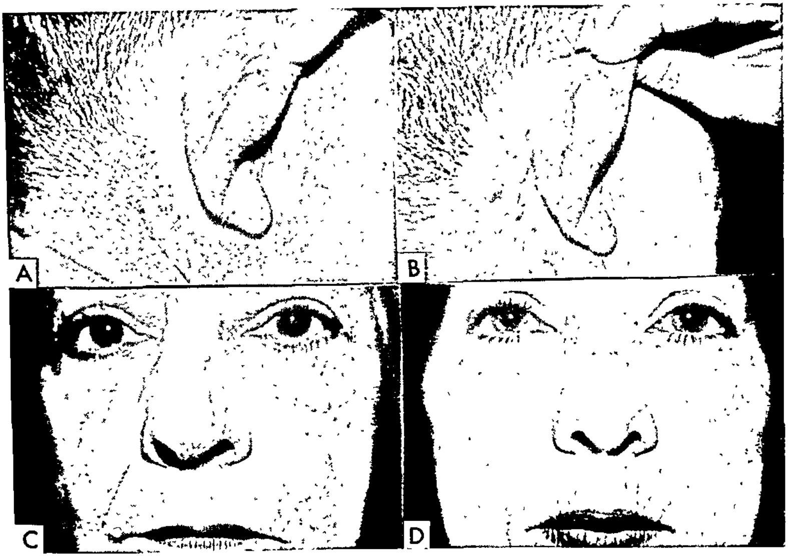
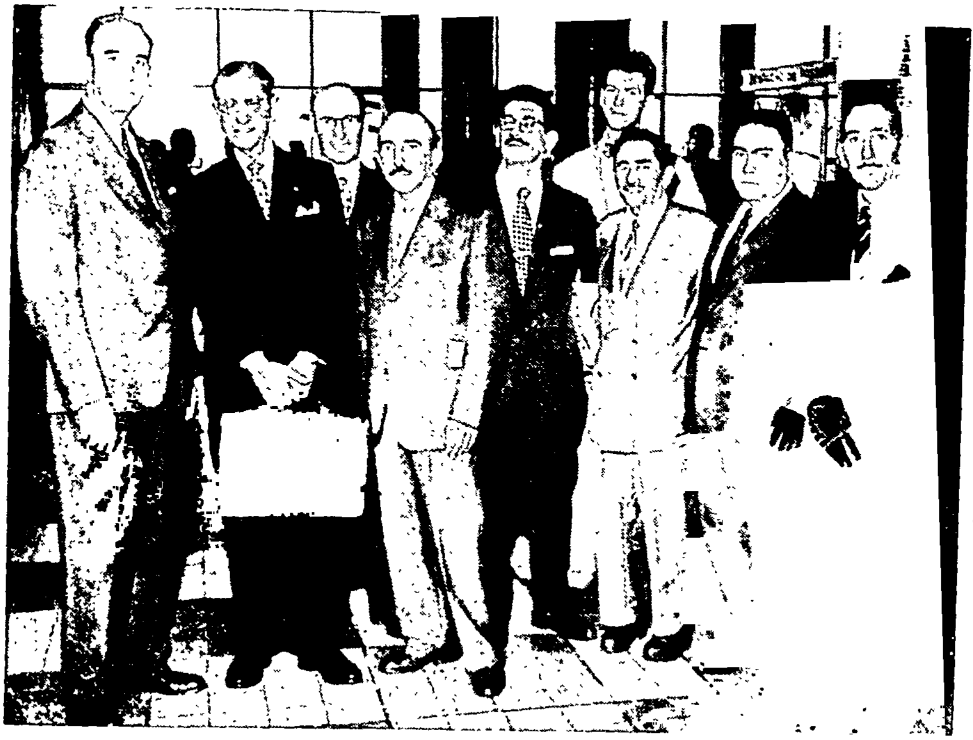


Fig. 3.—*A*, squamous cell carcinoma. *B*, results two years later. *C*, basal cell carcinoma of dorsum of nose. *D*, nose after two years.

vated rolled edge. The center is frequently crusted, and removal of the crust may reveal a raw, bleeding area or a glistening whitish surface. This tumor is especially inclined to be deeply invasive when over cartilage or bone. The rodent ulcer is a burrowing, mutilating ulcerative process that may continue until it destroys the entire ear or nose.

The squamous cell carcinoma usually arises from an existing precancerous lesion, such as a wart, keratosis, an ulcer, a pimple or a scab. Removal of the keratotic projection discloses a slightly bleeding base, with eventual ulceration. The borders are indurated; the lesion may be superficial, or there may be deep projection and invasion, and also fixation to deeper structures.[12] Not only is this tumor ulcerative and destructive, but it readily metastasizes to the regional lymph nodes. In a series of 256 cases of squamous cell epithelioma of the skin analyzed by Broders,[14] the average duration of the lesions in patients with metastasis was two and sixty-seven hundredths years, in those without metastasis, five and three hundredths years, and in those in whom no regional lymph nodes or salivary glands were removed, four and seventy-eight hundredths years. Ward and Hendrick[11] stated that it is an established fact that the younger the patient the more rapid the growth of squamous cell lesions.

The slit lamp, with its magnification and concentration of light, is an invaluable aid in the study and diagnosis of cancer of the skin. Small areas of infiltration may be seen which otherwise would escape attention. Adequate biopsy should always



Welcoming committee, greeting Prof. Dr. Maurício de Medeiros, Minister of Health for Brazil, upon his arrival at the São Paulo airport. From left to right, Prof. Dr. Carlos Gama, Prof. Dr. Maurício de Medeiros, Dr. Trieste Smanio, Prof. Dr. Matheus Santamaria, Dr. Nicolau Jabur Netto, Dr. Domingos Deláscio, Dr. Wladimir do Amaral and Dr. Alípio Pernet.

College to bring its Ninth Biennial International Congress to São Paulo in 1954, to coincide with the city's Fourth Centennial Celebration. That Congress, Prof. Gama went on to say, was pronounced among the best and most brilliant of the sixty-four congresses that comprised the cultural program of the centennial celebration. It created so favorable an impression on the officers of the International College, he said, that the signal honor of unanimous election as international President-Elect was extended to him, Prof. Gama, by the meeting of the House of Delegates. The same body also conferred one of its vice-presidencies upon Marechal Marques Porto and named Dr. Fernando Luz Filho the Assistant Regional Secretary for South America. It appointed Dr. Virgilio Alves de Carvalho Pinto the editor of the Portuguese summaries for the *Journal of the International College of Surgeons*, and conferred thirteen seats on the Board of Trustees of the College upon Brazilian members. "These honors," said Prof. Gama, "were given in recognition of the capabilities of the Brazilian Fellows—recognition never before extended by any other international medical body to the scientific and cultural potentials of the surgeons of our country,"

He told the audience of the truly amazing amount of work accomplished by the Brazilian Section in the seven short years of its existence. "We already have 1,200 members and 30 regional divisions organized around our most important medical centers," he said. "We have held three national congresses—at São Paulo in 1951, at Curitiba in 1953 and at Belo Horizonte in 1955. Great public attention was focused on the installation ceremonies of each of our regional divisions, with all sections of society lending their support and expressing their appreciation. The names of those who served as patrons of each of these solemn occasions reflect the prestige attained by our organizations, and many will be familiar to you. They were:

- Prof. Pedro Calmon
- Dr. Milton Campos
- Prof. Dr. Aloysio de Castro
- Dr. Roberto Moreira
- Dr. Arthur Santos
- Dr. José Barbosa Lima
- Dr. Menotti Del Picchia

ders Company, 1955, 7th ed., p. 625.

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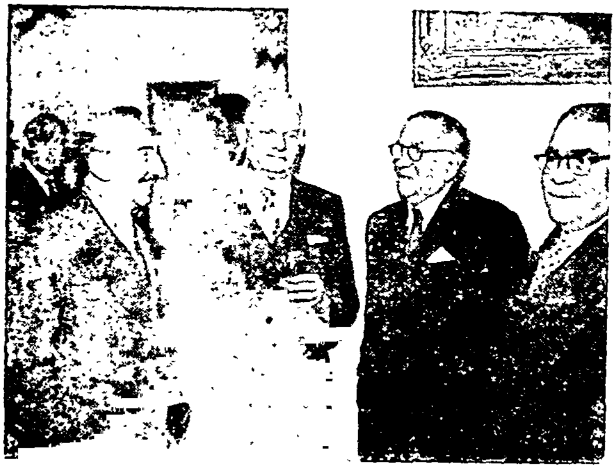
In April 1922, six months before Halsted's death and thirty-seven years after the discovery of nerve-blocking, Halsted was tendered a public banquet by the American National Dental Association and presented with a gold medal. He was much touched by this spontaneous and generous, though belated, tribute. He wrote to a friend: "The celebration was a success. I am so thankful to have lived to take part in it. Not a wink of sleep did I get during the night of Saturday. I was too exhilarated for repose. Once before in my life I was kept awake by a great happiness; this was the night that I passed successfully the examination for Bellevue Hospital, in 1876." What an interesting, frank, almost naïve letter for a man of seventy, already a member of a great many learned societies and an acknowledged world-renowned master, who was so pleased by the tribute to a discovery he made when a young man of thirty-three!

Halsted, after making this remarkable discovery, made no attempt to capitalize on it or to "get himself before the public," as many lesser surgical lights succeed so well in doing. There were too many unsolved surgical problems he was too busy with.

—*Major*



Guests at a reception, arranged by Prof. Dr. Carlos Gama, after the meeting held in his honor. From left to right, Prof. Dr. Matheus Santamaria, Acting President of the Brazilian Section; Prof. Dr. Paulo de Godoy, Clinical Director of the Hospitals of Santa Casa, São Paulo; Prof. Dr. José Cassio de Macedo Soares, Superintendent of the Fraternity of the Hospitals of Santa Casa, and Dr. Wladimir Amaral, Treasurer of the Brazilian Section.

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Prof. Gama spoke with pride of the publications of the International College. Our monthly Journal, with a circulation that exceeds 12,000 copies," he said, "is a rigorously scientific publication, with summaries of each article appearing in English, French, German, Spanish, Italian and Portuguese. Plans have long been under way to produce a Portuguese section in the Journal at regular intervals, with summaries of the material in the other five languages, so as to disseminate the scientific contributions of Brazil to surgeons throughout the world. Dr. Alipio Pernet, member of the present Board of Directors of the Brazilian Section has been named as the special editor of the contemplated Portuguese section of the Journal.

"The Proceedings of the Ninth Biennial Congress of the College were published in the same manner. The four volumes, containing nearly 300 scientific articles as well as general information pertaining to the Congress, appeared in the official languages of the College and were distributed to our members throughout the world. We were gratified to be able to distribute the first volume to Congress participants at the time of the Congress and to mail the other three a few months later."

He discussed the cultural and educational activities of the International College—teaching, patronage of universities and the organization of courses and conferences. "Our most recent advance in this sphere," he went on, "is the School of the History of Surgery and Related Sciences which was established at Chicago. Its program consists of a series of lectures by outstanding historians on the development of the surgical arts through the ages."

The President of the International College reviewed some of the administrative problems that arise from the need to transact organizational business on five different continents among different peoples and in many different languages.

"No longer can a single man or even a small group of men undertake all of the business at hand," he said. "We used to have a Board of Trustees, functioning largely in an advisory capacity. Our governing body has, however, had to be enlarged, and its responsibilities augmented and multiplied." He related that 140 men now comprise the membership of the Board of Governors, which conducts the business, administers the finances and governs the actions of the College. An interim body of 29 men has been established to facilitate activities even further.

"The Board of Governors," Prof. Gama stated, "was selected on the basis of stern rules, and the list of nominees was submitted to the House of Delegates for a vote. At the last meeting of the House of Delegates, 15 Brazilian surgeons were nominated. The 10 incumbents were re-elected, and 5 new members were added. They are:

- Antonio Vicente de Azevedo
- Geraldo Barroso
- Fernando Luz Filho
- Lucas Machado
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of purely renal over osseous manifestations. In 1935, the number of reported cases of this type had grown to 6 (Cope); by 1936 to 18. Eventually, in 1944, Cope reported that an overwhelming majority of his 78 cases belonged to the renal type, and cases of the osseous type were thus heavily outnumbered. The recognition of diffuse hypertrophy of parathyroid tissue required a new operative method, since the object of surgical intervention was no longer to remove either a normally or an abnormally situated adenoma but to "reduce" the parathyroid tissue (Cope).

Although the opposition to Erdheim's theory, based on the fact that compensatory hypertrophy of only one of the organs is scarcely conceivable, was to a certain extent shaken by this new discovery, there can be no doubt that here too, as in the case of adenoma, the hyperplasis is primary, because "reduction of parathyroid tissue" results in recovery.

Thus far only the Boston group of investigators had reported these observations. After Keating of the Mayo Clinic had visited Boston in order to study the new methods of examination, however, he discovered 24 cases of hyperparathyroidism during a period of two and one-half years, while in the preceding fourteen years there had been no more than 14 cases in all (Alexander, Pemberton, Kepler and Broders). In the Mayo Clinic he observed a large number of patients with hyperparathyroidism among those with renal lithiasis; and the renal type, in actual fact, outnumbered the osseous type.

Here the diagnosis of hyperparathyroidism had been established on the strength of repeated biochemical examination, and it was the Sulkovitch test — that simple and inexpensive test method for hypercalcuria—that had given the first hint of a derangement in calcium metabolism.

There is still a marked difference, however, between the results obtained by the Boston group and those obtained at the Mayo Clinic. Not one of Keating and Cook's patients, although these authors also noted a preponderance of the renal type, presented diffuse hyperplasia of the entire parathyroid tissue that had been so frequently reported by the Boston group. All of them, however, had adenomas.

The renal type of primary hyperparathyroidism is not necessarily, therefore, connected with diffuse hyperplasia of the parathyroid tissue, but its pathologic expression may also consist of isolated adenomas, as with the osseous type of primary hyperparathyroidism. This is not to exclude the fact that in the cases of diffuse enlargement of all the parathyroid glands, observed especially by the Boston investigators, a special and new entity of primary hyperthyroidism was presented. For a long time, of course, I also have examined all patients with lithiasis at my disposal. From the beginning of my studies on hyperparathyroidism I was interested in the relation between renal calculosis, osseous changes and parathyroid tissue. As early as 1933 I published, in collaboration with Übelhör, an experimental paper showing that, by injections of parathormone into guinea pigs with congestion of the urinary bladder, one may produce stones in the kidney. In nearly all experimental animals the calcification in the kidney can be produced in about four weeks.

In patients the results of my search for clear cases of renal hyperparathyroidism were poor. In only 1 case, at the place of my former work, was the condition observed at autopsy (parathyroid adenoma of the clear-cut renal type). During the past year in Vienna, at one of the most frequented urologic stations, only two clear cases of the renal type could be discovered; after removal of the parathyroid adenoma it was found that [illegible]ent

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aspectos da questão exigem e justificam novas pesquizas. Em nenhum caso de tumor paratiereoideo a operação que eu divulguei trouxe ainda uma solução completa no parecer dos cirurgiões de glandulas internas contra uma molestia endócrina mortal.

RESUMEN

Parece que hoy, treinta años después de que la primera paratiroidectomiá fué efectuada con éxito para el tratamiento del hiperparatiroidismo primario, muchas preguntas están todavía en un estado de poca claridad ya que este campo de investigación no ha perdido aún su importancia.

Pero en todo caso, la operación para tumor paratiroideo, que yo introduje, ya está dando verdaderos resultados a cimjanos endocrinológica mortal.

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were guided chiefly by the interests of the International College.

"When Alberto Santos-Dumont was honored by numerous admirers at St. Cloud, on the outskirts of Paris, for the first European flight in a heavier-than-air machine, he expressed his thanks for the tribute by saying, 'The honor bestowed upon a Brazilian reflects glory upon our entire country.'

"Let me, in the shelter of this magnificent thought, also say that my election to the presidency of the International College of Surgeons is an honor extended to every member of the Brazilian Section, to all of the doctors of Brazil and to all Brazilians. It reflects glory upon our entire nation.

"This cap and this gown will go where I go, and robed in its majestic colors, among which are the green and the gold of our flag, I shall do everything in my power to elevate the International College of Surgeons and to serve with dignity our own Brazil."

POSTGRADUATE COURSE IN SURGERY OF THE DIGESTIVE TRACT

The second advanced course in surgery of the digestive tract, limited to graduate students, will be conducted under the auspices of the International College of Surgeons at the Hospital de la Santa Cruz y de San Pablo of Barcelona, Spain, under the leadership of **Dr. José Soler-Roig,** F.I.C.S., Director of the hospital. Collaborating in the teaching program will be Drs. N. Lloret, F. Amoros, C. Ortoll, J. Montaner, P. Arque, A. Sitges, A. Modolell, M. Miserachs, A. Moliner, L. Torre Eleizegui, J. Jou and J. Raventos.

The course, devoted to theory and practice, is designed for graduate students with less than five years of professional practice. Only 15 students can be accommodated in the period of study beginning January 15 and ending May 15, 1957. Participating students will be considered as assistants of the Service and will be obliged to comply with the work schedule of the Service, which consists of:

9:00-9:30 Interpretation and comment on clinical cases

9:30-12:00 Practice in rooms, dispensaries, etc., on a rotation basis. In operating room sessions the students will be instructed in surgical technics applied to diseases of the digestive tract and will participate in operations under the direction of professors

12:00-1:00 Development of theoretic lessons

To secure a Certificate of Accreditation for Advanced Work, the following prerequisites are essential:

1. Continuity of attendance
2. Demonstration of surgical aptitude, judged by the Director and Professors of the course
4. Advance payment of a registration fee of 500 pesetas, to cover teaching expenses

A contest will be held for two places for a year's residency in the Service for a year, starting January 15, 1957. The residents will receive room and maintenance in the Hospital and will present a work which can be rewarded by a medal.

For information, write immediately to: Muy Iltre, Administracion del Hospital, Avenida de San Antonio Maria Claret, 167, Barcelona, Spain.

Portal hypertension may also develop suddenly, for instance, after ligation of the portal or hepatic vein. If the pressure increases slowly, only certain portal roots become obstructed and dilated. The flooding of the mucous membranes of the abdominal organs or of parts of the intestinal tract produces a large variety of syndromes, pathographically described as specific organic diseases. Their genesis, however, has never been explained. No wonder the cause of these fictitious diseases has never been disclosed.

Since portal hypertension may be intermittent, it may also disappear. Since destruction of the liver cells may be followed by regeneration, several clinical syndromes may improve.

Shell,[14] in 1931, reported the close relation existing between insufficiency of the liver and the accompanying syndromes. Ten per cent of his cirrhotic patients had gastric or duodenal ulcers. According to Blond and Haler,[4] all ulcers of the intestinal tract, including those of the esophagus and the rectum, are signs of intermittent portal hypertension. The known intermittent hemorrhages from esophageal and rectal varicosities are signs of portal back-pressure, depending on the actual degree of hepatic insufficiency. Alterations of the portal back-pressure may occur physiologically, e.g., at the height of the digestive process or during defecation in the majority of cases. The most frequent signs of portal hypertension are hemorrhoids and their complications; it must, therefore, be a matter of surprise that textbooks still maintain their cause to be unknown, most probably because it is too difficult to grasp the causation of dynamic processes on the basis of pathographic descriptions. With my interpretation in mind, I cannot admit a different causation for esophageal, gastric, duodenal and rectal ulcers. Colitis ulcerosa is also due to portal backflow into the colon; that the clinical picture differs has to do only with the local intestinal flora.

Child, in 1954, stated as a result of his animal experiments: "When the obstruction to the portal flow lies outside the liver, numerous anastomotic channels develop in the immediate vicinity of the occluded portal or splenic veins. These partially circumvent the block, and portal blood gains access to the liver almost directly. The components of this type of collateral circulation are the deep cystic veins of the gall bladder, the epiploic veins of the gastric omentum, the hepatocolic and the hepatorenal veins and the accessory veins of Sappey." There are, in addition, a great number of portacaval shunts (cf. Blond and Haler, Eig. 4). Child also affirmed that, after ligation of the portal vein or after Eck's shunt operation, either in man or in the experimental animals, *survival is possible only if new portohepatic collaterals are formed that restore the portohepatic circulation.* This interpretation appears to prove that the portal blood contains toxic proteins—that is, the true carcinogenic substances, according to my interpretation. Anemia, leukopenia and thrombocytopenia belong to the syndrome of portal hypertension. It is known that after splenectomy the blood picture changes; therefore the spleen has been made responsible for the abnormal blood picture, though no explanation of its mechanism has been offered. Splenomegaly also belongs to the syndrome of portal hypertension. The supposed hyperfunction of the spleen is termed "hypersplenism," a term that explains neither the cause of the disorder nor the late effects of splenectomy. I have already pointed out that enlargement of the spleen is a sign of hepatic insufficiency and of portal backflow. Toxic proteins, when flooding the spleen, may also reach the hemopoietic or ans vi [illegible] latordinary men, served only to strengthen this man with his abiding faith in his mission and in himself.

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[14] Snell, A. M.: Ann. Int. Med. 5:338, 1931.

His natural talents and his linguistic abilities gave him the advantage of a personal persuasion in many countries. The fact that we now have sections of the International College of Surgeons in every part of the civilized world reflects the universal endeavor of man to overcome the madness that overrides the world today. Indeed, this enormous task of creating understanding instead of doubt, sharing instead of withholding knowledge, is already accomplished and fulfilled by the international College of Surgeons. This is my appreciation of the everlasting work of Max Thorek.

And now is the proper moment to quote the following lines from the writing of Max Thorek himself.

"Whatever a man's talent, whatever his capacity for hard and unremitting toil and whatever pinnacles of success he may reach, he will not forget, if he is a man of integrity, those who have helped him attain his goals. I for one am profoundly aware of this. In the course of a long and extraordinarily busy career, in addition to a heavy surgical schedule, I have been able to expand my activites to include the founding of the American Hospital of Chicago, The Photographic Society of America, The International College of Surgeons, The International Surgeons' Hall of Fame and the International School of the History of Surgery, meanwhile serving as editor of the *Journal of the International College of Surgeons* since its inception.

"Could I have done it all, one man alone? Never. Happily I am not one man alone; I am one man multiplied over and over again by those who have given themselves to the causes I cherish. Many men and women have helped my dreams come true—first, foremost and always, my beloved "Fim"; then a host beyond number of faithful friends and colleagues, and finally those members of the College staff whose loyalty has stood the test of time."

It has been said that behind every great man there is a great woman. I will not miss this opportunity to express to "Fim" (Mrs. Thorek) my most sincere love and admiration and thank her in the name of the members of the College for her inspiration and loving ministrations that have enabled her sweetheart, as she constantly refers to him, Max Thorek, to carry on. Her love for him, her counsel and her constant inspiration were the *vis a tergo* that finds him again in full activity among us.

Postgraduate Course on Surgery of the Hand at Nanterre given under the auspices of the International College of Surgeons

Dr. Marc Iselin announces that registration is open for the Eighth Course on Surgery of the Hand, to be given September 16-22, 1957, at Maison Départementale de Nanterre, 403, Avenue de la République, Nanterre, Paris (Seine), France. The Sixth Course, meeting from September 24 to September 29, 1956, was attended by twenty-four surgeons, representing eight countries. Application for the Seventh Course, which will convene April 29-May 4, 1957, is already closed.

Medical and Surgical Aspects of Chronic Ulcerative Colitis: An Appraisal

THE purpose of this editorial is not to belittle or condemn standard methods of management of colitis but rather to emphasize what has seemed important in treatment, both medical and surgical, over a considerable period of years. Emphasis is placed on the psychogenic factors, the basic treatment program and the rejuvenation of an old but bolder concept of what goes into the surgical problem, with a reduction in the number of ileostomies. If one stops to consider the overall problem, it becomes obvious that the physician in charge must be father confessor, advisor and executive if the best management is to be carried out. In the hospital I serve, this has, by principle and practice, grown to be the exact state of affairs. *Since the disease runs the entire gamut of* medicine, it taxes the ingenuity of the shrewdest internist, the ever-observant psychiatrist and the most exacting surgical technician. Whenever possible these responsibilities should be combined in one person, the attending physician.

One often hears it remarked that the abdomen is the sounding-board of the emotions, since it is so well supplied with autonomic nerve fibers, of both the sympathetic and the parasympathetic system. The lines of communication between brain centers and the viscera and the behavior patterns of the gastrointestinal tract that have been utilized in infancy are carried to the brain and lodged there in that reservoir of memory, the subconscious mind. In spite of the fact that the relation between psyche and soma is well known, it is surprising how little attention is given to this matter in the actual management of gastrointestinal disorders. Rarely is an evaluation made of the personality or the life situation of the patient. The physician may be too busy to try to work this out with the patient. Giving him a prescription for a digestive medicant is the path of least resistance. Even though he admits that there is a large "nervous element" present, he often looks upon this feature as secondary and probably a consequence of the physical disorder. He does not consider the psychic factors in illness on the same scientific level with gastric analyses, stool cultures or roentgen studies, and *therefore he pays scant attention to them.* He accepts psychogenesis only abstractly and with vague understanding of the nature of mental mechanisms and the part they play in illness. It was only a few years ago that psychiatrists impressed the profession with the fact that they proposed to cure chronic ulcerative colitis with psychotherapy alone, without the use of drugs. It was an interesting exercise but, like all branches of medicine, was self-limited.

If all the interested departments can be brought into the picture and integrated, there is no doubt that the patient will be benefited. It takes time and persistence to question the patient along the line of his mental processes. He may be sensitive and conclude that he is regarded as a weakling who "can't take it," or perhaps that he actually is a "mental case." The physician, not wishing to arouse ill will or antagonism, follows the traditional line of phys-

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From the Ferguson-Droste-Ferguson Hospital, Grand Rapids.

Read at the Mid-Atlantic Division Regional Meeting of the United States and Canadian Sections, International College of Surgeons, White Sulphur Springs, Virginia, Feb. 10-13, 1957.

the deadly hostility of the underprivileged (the slave, whether to a man or to an idea) toward the privileged (the freeman).

A new definition of the word "privilege"? It would almost seem so. Psychologists and social workers tell us constantly of the role—sometimes, they seem to imply, the exclusive role—played by underprivileged in juvenile delinquency. They are quite right. Every delinquent is in some sense underprivileged. What they neglect to add is that lack of material comforts and advantages does not necessarily lead to delinquency; Abraham Lincoln, to name but one example, was a sadly underprivileged child in the social worker's sense of the world. What they further neglect to add is that the possession of material comforts and advantages does not necessarily prevent delinquency, even when accompanied by high intelligence. What they totally neglect to emphasize, in analyzing the making or the marring of a man, is poverty not of the body but of the mind and spirit, a form of underprivilege that bears the same proportion to the ordinary kind as the Colossus of Rhodes to an anthill. Deprive a child of wholesome food for his body, and you may stunt his physical growth and impair his intelligence; deprive him of food for his mind and spirit, and you deprive him of manhood itself.

All tyrants and dictators know this. They also know a short cut to its achievement: take away freedom of thought and action, impose absolute conformity under penalty of death, slavery or torture, and the thing is done. If one is ruthless enough, it is not always even necessary to catch the victim in childhood. The inevitable result is poverty, nay *paralysis*, of the victim's mind and spirit, though his body may be fed as well as need be. The mind and spirit cannot develop in chains.

We of the International College of Surgeons know it too, thanks to the experience provided by our world-wide interests and activities. We know only too well, and have seen only too often, that there is a strain in universal human nature to which irresponsibility is attractive, and to which even a mature man may occasionally be tempted. Once yielded to, it spreads like a contagion and may all too easily become pandemic.

As scientists and as members of the healing profession we look upon this madness with compassion, but we cannot associate with it. If the world is to be preserved in sanity, its preservation will depend upon those who, by keeping their sights trained on the values of freedom, have managed to escape the contagion. It is for us in this crisis so to conduct ourselves that "he who runs may read" in our lives and works the good news that, in one considerable segment of world society, the free interchange of ideas has resulted in friendship, harmony and peace. Even a pawn on a dictator's chessboard must eventually find this picture pleasant, and we are not without hope that our prescription, which is as palatable as it is effective, will one day become the treatment of universal choice.

—M. T.

Have you made your arrangements for the Tenth International Congress, to be held in Mexico at the invitation of the Mexican Government and under the Honorary Presidency of His Excellency Don Adolfo Ruiz Cortines, President of the Republic of Mexico, on Feb. 24-28, 1957, at University City, Mexico, D. F.? If not, do so immediately, as accommodations in leading hotels are getting scarce. Please reply to:

Secretary, Tenth International Congress
1516 Lake Shore Drive
Chicago 10, Illinois

baffling syndrome could be attributed, but most of the studies have been disappointing. All of us are aware of the accompanying mesenteric adenitis and the processes involved with perforation. Fistulas may occur, extending to the base of the mesentery, and then drain into the peritoneal cavity and cause peritonitis and all too frequently the patient's death. We are also well aware of the insidiousness and persistence of the staphylococcus and the streptococcus.

Nutritional anemia is always present. Iron deficiency is frequently present also, causing hypochromia and microcytic anemia. The deficiency may be due either to excessive loss of iron from the body, as in cases of chronic hemorrhage, or to an inadequate quantity of the element in the diet. This becomes a difficult replacement problem. I have come to look upon iron, given in almost any form, as a "filed-up tenpenny nail" that causes marked mechanical irritability and often excessive bleeding. I have had some success replacing iron with whole dark dried fruits, such as raisins, figs, dates, prunes or apricots.

Protein deficiency, though in itself a less common cause of anemia, is not infrequently a contributing factor, but replacement is fairly easy and satisfactory. Lack of vitamin C or certain factors of the B complex, such as ribroflavin, nicotinic acid and folic acid, are important items. Five hundred mg. of vitamin C is given daily in most instances. Vitamin C is not stored; consequently, large doses are in order. Failure to utilize the specific antianemic factor may occur, though this appears to be rare. This type of anemia, of course, is treated as usual, and vitamin B12 seems to be definitely a necessity. The adrenal cortical steroids have been an extreme disappointment; in many instances in my own practice, they have been distinctly determental. Severe, hard-to-control hemorrhage has seemed to result from Cortisone therapy, though this is difficult to prove. ACTH in well regulated doses has been helpful, although the accompanying oversecretion of cortisone has produced some manifestations similar to those of adrenal cortical hypofunction. ACTH is much easier to use, though its influence on salt and water balance, alkalosis and neuropsychiatric reactions must be borne in mind. It is unquestionably extremely valuable in control of such remote manifestations as iritis and complications involving the skin and the joints.

The troublesome and insidious staphylococcus strains are usually sensitive to Tetracycline and Erythromycin.

One of the greatest disturbing factors in colitis in my own practice has been the use of milk in large quantities, particularly by the young. The great American habit of not weaning babies when they have acquired their teeth, has in a sense boomeranged upon us. Milk as as a beverage is omitted from the hospital diet. Most of the patients we see are milk drinkers. The other animals, guided by nature's dictum, do not by any means follow man's direction. As soon as they get their teeth, the mother weans them, whereas we put our babies on cow's milk. If our human mothers had to provide the milk used by our milk drinkers, they would settle the question once for all; but that is another story and does not bear too much discussion. Suffice it to say that there are a great number of allergens present in milk that are not tolerated by the patient with colitis.

A record is maintained by the dietician indicating the type (usually high protein, acid ash), the amount and caloric value of the food intake and how it is tolerated. This becomes the patient's daily guide. His likes and dislikes are charted. Often im-

lar. Many American citizens residing in Mexico are taking a leading part in arranging entertainment for the Woman's Auxiliary.

Mexico City is one of the most colorful spots in the Western world and, in the immediate years, excellent planning has made accessible to tourists the historic ruins of the ancient Mayan civilization. The port of Acapulco, on the Pacific Ocean, is one of the world's great fishing grounds. It is expected that many of the surgeons and their families will take advantage of the fishing there, following the convention.

This past week the Regent for the State of Kentucky, Dr. Joseph A. Bowen, Dr. Elbert Dennis, the Regent for the State of Indiana, Dr. Paul E. Haley, and Dr. Leon Gray of Indiana met with the Executive Director at the College headquarters in Chicago. The occasion for the meeting was the planning of the program for the Great Lakes Regional Meeting, to be held at French Lick, Indiana, on April 7-10. The Regents of these two states will be the co-chairmen for this meeting. The Regents of all the states in the Great Lakes Regional Division are taking an active part in the planning, and the meeting should be a real success.

It is my plan to visit all States in the Union in this present year, and a schedule has been completed. Letters are now going out to the Regents of the various States, so that meetings can be set up, to enable the Executive Director to meet with the Regent, his officers and credentials committee members in each State. Fortunately transportation is such today that it will be possible to spend fifty-two days in this operation without interrupting a general operating schedule of the College.

The lectures at the School of the History of Surgery and Related Sciences continue to be most interesting. On Tuesday, January 8, a really splendid lecture was given by Dr. Guy K. Tallmadge of Marquette University on early French surgery. These lectures will continue up to the middle of May, and all who can are urged to attend, for the lecturers are the outstanding professors of the history of medicine in the United States. Active planning is now under way for the ensuing year, and the schedule will be published in the not too distant future.

The past year, 1956, was a very active year for the College, and many constructive steps were taken for the future. This year will see us putting those plans into effect. If these plans are to be successful, all of us will need to extend every effort toward the furthering of the interests of our organization. The International College of Surgeons is truly an international organization. As such we must do everything possible to interest young surgeons in the belief that world medicine and surgery is here today and will be even more evident tomorrow. Ours is an organization that has been far-seeing enough to realize this.

Have you arranged to attend the Mid-Atlantic Regional Meeting at The Greenbrier Hotel, White Sulphur Springs, West Virginia, on Feb. 10-13, 1957? If not, do so now. Write directly to the hotel for your reservations. Include your family in your plans. The rates are $21.00 for single and $35.00 for double rooms, American plan. Recreational facilities and gratuities are included in the rates.

Le Diagnostic du Cancer D'Estomac a la Période Utile (Diagnosis of Cancer of the Stomach at the Time Most Favorable for Treatment. By René A. Gutmann. Paris: G. Doin et Cie, 1956. Pp. 257.

The author emphasizes the importance of making early diagnosis of carcinoma when it is amenable to operation. He describes three types of early carcinoma of the stomach; mucosal, submucosal, and "small cancer" (less than 1 cm. in diameter). Attention is called to the fact that the classic symptoms of gastric carcinoma may be entirely absent during the early stages, and in many such instances the patient's complaints are attributed to ulcer or dyspepsia. In some instances carcinoma develops over a long period of years. The patient's age is no great factor in its development.

The chapter on roentgenologic study (written by Mme. le Docteur Jacqueline Daoud) covers 126 pages and is illustrated by many diagrams. Diagnostic points are discussed in detail. The author states, contrary to current opinion, that roentgenographic diagnosis of early carcinoma of the stomach can be made in many instances. She describes the technic she considers essential for proper visualization. Fluoroscopic study is of no value except to verify what has already been demonstrated by properly taken roentgenograms. She describes the roentgenographic appearance of the infiltrating, ulcerative and fungating types of gastric carcinoma. There are numerous instructive sketches.

Dr. Gutmann disagrees with the opinion that gastroscopic study is important in the diagnosis of early carcinoma, but concedes that it is useful in confirming a diagnosis already established roentgenographically.

In the chapter on supplementary methods of diagnosis he mentions laparoscopic study, which, in his opinion, has little value. It does, however, confirm the presence of late carcinoma with metastatic involvement of the liver and peritoneum, at which stage the lesion is inoperable.

In summarizing the chapter on cytologic study (written by Prof. Laumonier) the author states that, while it may be an interesting method, it has little value in diagnosing early carcinoma, since it has not yet been sufficiently developed to be accurate.

There is little relation between gastritis and early carcinoma, but late carcinoma may be secondary. The author discusses precancerous lesions: ulcer, gastritis and the polypi accompanying pernicious anemia. He is convinced that any recurring gastric disturbances should be considered serious until otherwise diagnosed.

Dr. Gutmann stresses repeatedly the importance of well-taken roentgenograms and their proper interpretation in the diagnosis of early carcinoma of the stomach, which is often overlooked. He records his wide experience in its diagnosis and treatment. The text includes 155 illustrations, and there is an additional group of 348 more, all well done. There is a summary in English at the end of each chapter, which will facilitate the reading of this book.

CHARLES PIERRE MATHÉ, M.D.

L'Hemispherectomie (Hemispherectomy). By E. Laine and Claude Gros. Paris: Masson et Cie, 1956. Pp. 134, with 31 illustrations.

This monograph is based on the authors' experiences during the past five years with 39 hemispherectomies. In 32 instances the procedure was carried out because of encephalopathy and in 7 because of tumor. There was an extensive angioma in 1 of the encephalopathic patients and thrombosis of the internal carotid artery in another. In the remaining 30 the encephalopathy dated from early in life.

The surgical technic is thoroughly described and well illustrated. The advisability of preserving the basal ganglia is thoroughly discussed, and the postoperative studies are thorough and well organized. Selection of cases, operative indications and contraindications, preoperative studies e ther
results are all thoroug d.

Woman's Auxiliary

President's Message

INCIDENT IN A COFFEE SHOP

Mrs. Clifton L. Dance

We think of an incident as some trivial happening, but "Incident in a Coffee Shop" conjures up a dimly lit place with an air of mystery and, before you get your bearings, a husky-voiced Dietrich-type chanteuse, chanting tantalizing couplets. You soon suspect that these convey something sinister beyond the *double entendre.*

Frankly, I just brought Dietrich in to catch your interest. The incident I am about to relate contains no hidden mystery; moreover, it happened on a clear, sunny morning in the coffee shop of The Palmer House in Chicago, during our last Congress there, and it does relate to our Woman's Auxiliary. This was during the combined Congress of International College and the United States and Canadian sections of the College. Even though we had no mystery, we did have an international air of camaraderie which was apparent on all sides, because the International College of Surgeons practically takes over this great hotel during its Congress. You meet animated, friendly groups coming and going in the lobbies, the elevators, the dining rooms and, of course, the coffee shop, where I was having breakfast.

September is a good time at The Palmer House; the honeydew melon has reached that just right degree of delicate ripeness. I was enjoying mine when a lady at my right said, "My, that melon looks good. Every time I order melon it is either too hard or too ripe." I assured her mine was just perfect and after she was served her portion she ventured into what really interested her: our group of women. She looked inquiringly at the badge I was wearing, and wanted to know especially just what surgical organization could interest women and occupy them as wholeheartedly as our women appeared to be. She had noticed me greeting Madame Pandalai, sitting opposite us, dressed in her beautifully blended colors of India. Another group of women from Switzerland waved happily, and still another couple, from Brazil, changed easily from Portuguese to English as they greeted me. All this, interspersed with the hearty "Hi's" of my country women, intrigued the woman beside me.

It turned out that her husband was a surgeon too, and he belonged to his organizations, yet she came alone to Chicago from a nearby state periodically, for shopping, but had long ago given up accompanying her husband on his trips to attend his "medical meetings," as she called them. Whether they had a Woman's Auxiliary or not, she did not know, but she told me confidentially that even the men of the International College seemed more friendly than any group she had met. At this particular moment, as if on cue, in came Professor Graña from the fabulous country of Peru to be greeted with a decidedly Texan whoop by a very tall gentleman (whose name I do not know but who also wore a badge), and these two embraced like long lost brothers. "That's what I mean," said the lady beside me. "I surely would love to go with my husband to this sort of meeting."

This is the incident I wanted to tell you about. It is a true incident. The International College of Surgeons has always been known as a friendly organization. Newly inducted members often express this feeling and, although it is the scientific meetings and the excellence of the speakers and these experiments, regeneration proceeding from its normal edge toward the anastomosis.

THOMAS WILENSKY, M.D.

Sex Hormone Excretion After Bilateral Adrenalectomy and Oophorectomy in Patients with Mammary Carcinoma. Strong, J. A.; Brown, J. B.; Bruce, J.; Douglas, Mary; Klopper, A. I., and Loraine, J. A., Lancet 1: 955, 1956.

The excretion of sex hormones by a postmenopausal patient before, during and after bilateral adrenalectomy and oophorectomy are described in this study, in detail and very commendably.

It is concluded that the small amount of hormone excreted by such a patient after an operation was not derived from adrenocortical tissue.

None of the patients responded to intravenous infusion of corticotrophin. The pattern of hormone excretion in patients who responded favorably to the operation did not differ from that in patients who showed no improvement after the removal of both adrenals and ovaries.

EDMUND LISSACK, M.D.

The Behavior of Carcinoid Tumors of the Intestinal Tract. Spain, D. M., Am. J. Gastroenterol. 26:162, 1956.

Carcinoid tumors may occur in any area of the gastrointestinal tract, involving the stomach and rectum on occasion. It is estimated that 1 per cent of all gastrointestinal tumors are carcinoids. Those examples of carcinoid that run a benign course cannot be differentiated on histologic grounds from those which infiltrate and ultimately metastasize. Carcinoid tumors are frequently malignant, but long survival in the presence of metastases is not uncommon. Benign carcinoid tumors may produce a variety of manifestations as a result of local involvement of the intestinal tract; e.g., obstruction, intussusception, diarrhea, hemorrhage, pain and loss of weight. It is estimated that from 80 to 95 per cent of all carcinoids are located in the region of the ileocecal valve; the most frequent site in the small intestine is the ileum. A biopsy specimen of rectal carcinoid may be mistaken for carcinoma, or may reveal no tumor cells because of the deep submucosal type of growth. A current concept is that all carcinoid tumors must be regarded as potentially malignant.

The syndrome associated with malignant carcinoid consists of predominantly right-sided valvular endocardial fibrosis, a peculiar type of cutaneous telangiectasia, cyanosis and blushing secondary to vasomotor changes and asthma-like symptoms due to bronchoconstriction. The substance responsible for this syndrome is believed to be a 5-hydroxytryptamine, regarded as a specific hormone of the enterochromaffin cell system and also elaborated in great quantities by carcinoid tumors. It is also present in the urine of patients with metastatic carcinoid. This is used as a diagnostic test. This substance is believed to be responsible for the attacks of flushing, the skin manifestations and the occasional asthmatic attacks that may occur in this syndrome. Attempts to reproduce the endocardial lesions experimentally in rabbits with 5-hydroxytryptamine have so far failed.

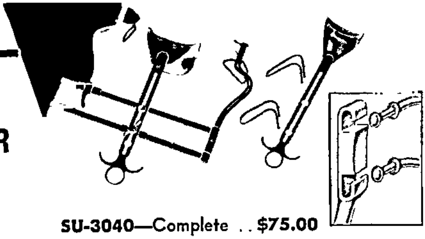
J. RICHARD MOORE, M.D.

Some Aspects of the Mechanics of the Abdomen. Adno, J., South African M. J. 30: 535, 1956.

This interesting and stimulating paper represents the results of the author's probings into the vast unexplored field of knowledge pertaining to the mechanics of the abdomen and the abnormalities that may result, at least in part, from disturbances and failures of the mechanical forces considered.

In order to record intraperitoneal, intragastric and intraurinary vesical pressures the author utilized a polythene catheter filled with physiologic solution of sodium chloride and an electrical strain-gauge attached to an amplifier and a recording unit. The readings were accurate, and a record of the slightest variation was readily obtained. With this apparatus the author was able to refute the generally held impression that the intra-abdominal pressure is negative. By this means he was able to demonstrate that the intraperitoneal pressure is positive except for a low-pressure area im-

Dr. M. Arthur Kline, who has worked so selflessly on behalf of Hungarian refugee doctors in Vienna, during a visit to the Speidel Hall of the Immortals, International Surgeons' Hall of Fame.



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For details see
"INFORMATION"
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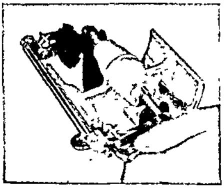

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I am writing in the hope you will insert an appeal in *The Journal* to help these Hungarian colleagues. Eventual contributions could be forwarded to the American Medical Society of Vienna, or to myself. As an American I can accept and convert personal checks that are sent to me. Prof. Dr. Felix Mandl, Prof. Dr. Leopold Schönbauer, and myself have been selected by the International College to function as a committee to control the distribution of aid for the refugee physicians. Any money received would be immediately acknowledged and rigorously accounted for. I sincerely hope that something can be done for the tragic Hungarian fellows, for the situation here is urgent.

M. Arthur Kline, M.D.

To the Editor
Journal of the American Medical Association

Since I last wrote to you the situation here has deteriorated drastically! During the past two days over 118 doctors have escaped over the Austrian border. As of 18:00 hours last night, 218 refugee doctors had registered in Vienna alone! It is estimated that more than 100 refugee doctors and their families are now being screened at the border stations and will shortly flood into Vienna. The reason for this sudden panic-stricken exodus is that the Communist Secret Police are arresting all physicians who had treated the revolutionaries for wounds and who did not report the details to the police. According to the reports of the physicians who have arrived here during the past two days, several hundred Hungarian doctors have been arrested and detained in the A. V. O. (Secret Police) headquarters throughout Hungary. The doctors escaping into Austria arrive here absolutely penniless. The Hungarian florin presently has no exchange value whatsoever, and as a result these doctors are entirely dependent on our aid. Many of them have been forced to walk over 200 miles to the border (no private vehicles are permitted to circulate in Hungary) and some of them have carried their infants and small children in their arms over the entire distance.

If each U. S. physician were to send us only one dollar, the immediate situation could be coped with. The status here concerning these Hungarian colleagues is now entirely beyond my and our financial capacities. Medicine is a proud profession, and, in this emergency particularly, we morally should care for our own.

M. Arthur Kline, M.D.
American Medical Society of Vienna
11 Universitätsstrasse
Vienna 1, Austria

Two Who Reached Safety

A Newsletter from the American Medical Association

Two physicians—a 36-year-old urologist and his wife, a 30-year-old pediatrician—and their 3½-month-old son were among 72 Hungarian refugees who reached Chicago last week (mid-December) under the sponsorship of Cardinal Stritch.

The 72 freedom fighters of Hungary were taken to The Palmer House, where they received free board and lodging as guests of Hilton Hotels, until they could be settled in private homes.

John L. Bach of the A.M.A. staff interviewed the two doctors, who requested that their last names be withheld for fear of Communist reprisals against relatives remaining in Hungary. Mr. Bach was accompanied to their hotel room by the Rev. Joseph Magyar, pastor of St. Stephen King of Hungary Church, who served as interpreter.

The two physicians, Laszlo and Elizabeth, who could speak some English, left Budapest on November 22 and arrived in Chicago three weeks later to the day. But the intervening three weeks were a nightmare.

Both were graduated from Budapest University, and both were professors at

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General Surgery

Degastroenterostomy

JOSEPH E. BELLAS, M.D., F.A.C.S., F.I.C.S., D.A.B.

PEORIA, ILLINOIS

DEGASTROENTEROSTOMY — removal of a gastroenterostomy—is an operation that ought to be obsolete, but until the results of gastric operations attain a level of 100 per cent effectiveness, it will behoove surgeons to retain an intimate familiarity with this procedure.

Indications.—In discussing degastroenterostomy, one must assume that gastroenterostomy has been done for peptic ulcer, real or phantom. Degastroenterostomy consists of removing an existing gastroenterostomy for the following indications: (1.) malfunction of the anastomotic stoma, (2.) secondary peptic ulcer occurring at or about the stoma, or (3.) gastrojejunocolic fistula.

1. Malfunction of a gastroenterostomy includes (a) vicious circle, (b) a contracted stoma with gastric retention and (c) a wide open stoma without vicious circle complications, without secondary peptic ulcer but with gastric retention.

In most instances the cause of malfunction can be traced to an improper indication for the operation or improper performance of the anastomosis. Occasionally, however, despite proper indications and performance, patients have disturbing symptoms due to gastric retention, regardless of an open stoma and the absence of secondary peptic ulcers. This condition was formerly known to surgeons as "gastroenterostomy disease" for lack of a better name. I suppose that the disturbance is associated with imbalance of the neuromuscular apparatus of the stomach, but I confess that this may be just an-

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Read before the Illinois Surgical Society, Galesburg, Aug. 25, 1956, the Illinois Chapter of the American College of Surgeons, Belleville, Sept. 29, 1956, and the North Central Illinois Medical Association, Princeton, Nov. 18, 1956.

Submitted for publication Feb. 11, 1957.

Medical News Front

Recommended Safe Practice for Hospital Operating Rooms

The National Fire Protection Association has published the eighth edition of its extensively read, extremely valuable pamphlet, entitled "Recommended Safe Practice for Hospital Operation Rooms." The sixty-year-old association, whose aim is to promote the science and improve the methods of fire protection and prevention, has compiled recommended standards for the construction and arrangement of operating rooms, delivery rooms and other places for surgical treatment, and for the performance, installation, maintenance and use of equipment in such areas. The intent of the recommendations is to reduce the hazard of igniting inflammable mixtures of combustible anesthetic agents, taking into account also the hazard of electric shock from power and lighting circuits. The material has been compiled in the course of years on the basis of studies conducted by many investigators.

The pamphlet is divided in three parts, the first of which deals with the nature of the hazards—combustible anesthetic agents, electric systems, electrostatic spark discharges, and flames and hot materials. Part II is devoted to construction and equipment, discussing the definitions of hazardous locations, ventilation and air conditioning, the storage and piping of gases, electrical wiring and equipment, and the reduction of electrostatic hazards. Administrative problems comprise Part III, in which the recognition of hazards and the responsibility of the hospital administration and professional staff in adopting and enforcing regulations, to govern the conduct of all people working in anesthetizing locations, are discussed. Physical and other hazards are summarized and hazardous areas, ventilation and humidity control, the handling of gases, electrical hazards, electrostatic hazards and recommended rules and regulations are reviewed. Of the two appendixes, one provides explanatory statements to aid in the understanding of the earlier recommendations, and the other lists the standards referred to in those recommendations. The booklet—endorsed by the American College of Surgeons, the American Hospital Association and the United States Veterans Administration—costs only twenty-five cents for a single copy, with a discount for quantity purchases. It may be ordered directly from the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Massachusetts.

Use of High-Frequency Sound Waves for Cleansing Surgical Instruments

An ultrasonic unit for cleaning surgical instruments was demonstrated at the recent meeting of the American Hospital Association. It utilizes sound waves of high frequency, with cold water or an inexpensive detergent solution, to clean the instruments. The American Sterilizer Company, manufacturers of the unit, claim that it permits cleansing in one-tenth the time and at one-tenth the cost of manual methods; it will accommodate 100 instruments at one time, and preliminary tests have indicated a 97.2 per cent efficiency.

Eleventh Annual Symposium on Fundamental Cancer Research

The University of Texas M. D. Anderson Hospital and Tumor Institute will hold its Eleventh Annual Symposium on Fundamental Cancer Research, March 7-9, 1957. The topic for the meeting will be, "Viruses and Tumor Growth." Program chairman, Dr. Leon Dmochowski, Chief of Virology and Electron Microscopy at M. D. Anderson Hospital, has announced the formation of an advisory committee to help arrange the program and select the speakers. Members of the advisory committee are: Joseph W. Beard, M.D., Professor of Experimental Surgery, Duke University School of Medicine, Durham,

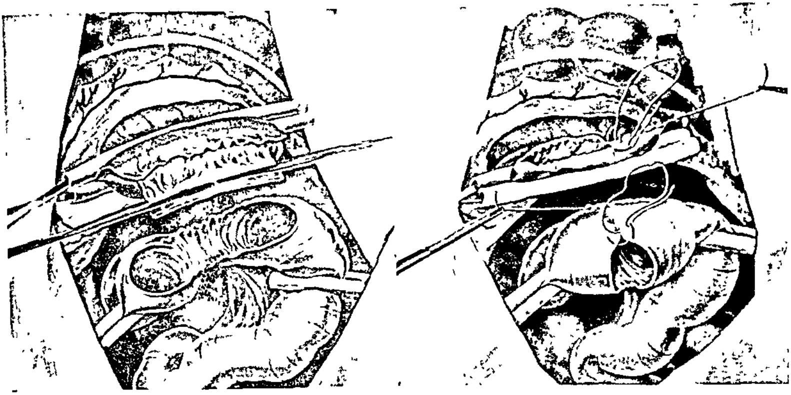

Fig. 5.—*Left,* degastroenterostomy and excision of gastrojejunal stoma. *Right,* reconstruction of jejunum. (After Spivack.)

This maneuver, coupled with the use of Upjohn's mycifradin, which sterilizes the intestinal contents, permits the inevitable inflammatory reaction around the fistulas to subside materially. During the interval of three or four months before the second stage, this patient lost his toxic feeling and appearance and began to believe that there was some hope. The presence of the colostomy is admittedly a nuisance during the entire course of the management, but it must be borne. A course of mycifradin was given for three or four days before the second stage.

In the second stage one will encounter many adhesions in and around the fistulas, and they must be reduced so that one can identify the abnormal fistulas. This is particularly difficult if a retrocolic gastrojejunostomy has been done, as in this case. I noted that the location of the gastrojejunal anastomosis is most easily found and its disengagement most readily performed if one enters the lesser peritoneum through the gastrohepatic omentum first. The attachment of the transverse mesocolon to the stomach must be separated, with constant awareness that the middle colic artery must not be injured. Manipulation, from above as well as from below the transverse mesocolon, will keep one more conscious of the relations and will reduce this hazard. The stomach above the anastomosis is divided between two crushing clamps so as to liberate the gastrojejunal anastomosis, still attached to the jejunum, at the expense of the stomach (Fig. 2).

The site of the jejunocolic fistula is then cleared of adhesions, and two series of clamps are placed in wedge-shaped fashion over the transverse portion of the colon on each side of the fistula beyond the limits of palpable induration. The defect in the transverse portion of the colon is then sutured in a transverse direction. Because of the diversion of the fecal current by the ascending colostomy and the sterilizing *effect of the mycifradin, one need* not fear contamination (Fig. 4).

The jejunal loop is then opened, ar areas of the gastrc [illegible] businesses and in other areas where control of exposure to the chemicals is not as efficient as it is in their manufacturing. The law is intended to be an enabling act, under which later regulations could spell out necessary details for enforcement and compliance. Other interested groups and persons will be consulted in its preparation.

Medical Problems of the Jet Atomic Age of Flight

Medicine in the jet-atomic age of flight will be the central theme of the twenty-eighth annual meeting of the Aero Medical Association in Denver on May 6-8, 1957. Reports on emergency escape from high performance aircraft, new developments in comfort and safety for air passengers and current research in manned space satellites will be discussed on the scientific program. Among special events of the meeting will be the third Louis H. Bauer Lecture, established in 1954 as a living tribute to the association's founder and first president, and presentation of the Lyster, Longacre and Tuttle Awards, the highest honors in aviation medicine. The first recipient of a new aeromedical medal, sponsored by Charles Pfizer and Company, will also be announced. An extensive display of scientific exhibits will be on view. Further information may be secured from the Aero Medical Association, Box 26, Marion, Ohio.

World Congress of Doctors for the Study of Present-Day Living Conditions

The Second International Conference of the World Congress of Doctors for the Study of Present-Day Living Conditions will be held in Cannes, France, on Sept. 27-29, 1957. Under the general theme. "International Conference on the Influence of Living and Working Conditions on Health." topics to be discussed are: the level of nutrition and the incidence of disease: effects of work on physical and mental health, and effects of increased ionizing radiation on human health. Persons interested in attending or participating should address their inquiries to the Secretariat of the World Congress of Doctors, Wollzeile 29/3, Vienna I, Austria.

Sixth International Conference of Geographic Pathology

The Sixth International Conference of Geographic Pathology will convene in the Grand Amphitheatre of the Old Faculty of Medicine at 12 rue de l'Ecole de Médecine, Paris 6, under the presidency of Prof. Jacques Delarue, on July 9-11, 1957. The theme of the conference will be, "The Geographic Pathology of Gastroduodenal Ulcers." Persons interested in participating in the conference can secure complete information by writing to Dr. J. P. Hardouin, 21, avenue Pierre ler de Serbie, Paris 16, France.

The Case History Service of the American Institute of Dental Medicine

The American Institute of Dental Medicine continues to offer histories from the broad field of dental medicine for 1956-57. They include original 35 mm. Kodachrome slides of the oral condition, pertinent laboratory observations, medical background, roentgenograms, photomicrographs, diagnostic criteria and any other material that may be indicated in each individual case, together with a general discussion of the disease. A loose-leaf binder and matching box for the slides will be furnished to each participant. The fiscal year of the Institute begins October 1.

The monthly service has been effective since October 1952, during which period 683 one-year subscriptions have been provided. The histories were accompanied by 100 Kodachrome slides.

Subscribers to the case history service are entitled to full membership in the American Institute of Dental Medicine. Members of the American Dental Association, the American Medical Association or their foreign equivalents are eligible to apply. Address all communications to Mrs. C. Novembri, 2240 Channing way, Berkeley 4, California.

Studies of the Use of Glyco-Algin as a Solution for Transfusion

TANZO TAKAYAMA, M.D., F.I.C.S.*

SAPPORO, JAPAN

THE transfusion of fluids is administered mainly to achieve two ends: first, to restore the water deficiency of the body, and second, to supplement nutritional deficiencies. In addition, transfusion is employed to treat shock induced by severe trauma or major operations, and also as a blood substitute or an expander of plasma volume. In other words, various fluids are administered by transfusion to chronically dehydrated patients preoperatively, during operation and postoperatively, especially when the amount of blood required for transfusion is not available in cases of unsuspected great emergency and/or when various nutrients must be supplied.

Hitherto saline solution, Ringer's solution and 5 per cent dextrose have been commonly used to restore body fluids. It has been revealed recently, however, that a limit exists to the amount of fluid administered and that saline solution causes a disturbance in water metabolism, influences the electrolyte balance and, above all, may be the cause of pulmonary edema and other dangerous complications. To counteract these, Darrow's solution, Dextran and other medicaments have been introduced. Nevertheless, the problem of fluid transfusion has become more urgent with the progress of operative technic and the increase in the number of operations performed.

With the foregoing facts in mind, I have made chemically pure Glyco-Algin from sodium alginate, to be used in transfusions for dehydration, as a blood substitute and as a so-called plasma volume expander (Bowman).

These studies were begun in 1948 and completed in 1951.

Chemical and Biologic Properties of Sodium Alginate: Alginic acid, a polymer of a mannuronic acid, is chemically a polysaccharide and has a high molecular weight. Sodium alginate has a colloidal property, is soluble in water and has high viscosity. The structure of alginic acid is shown in Figure 1.

Glyco-Algin is prepared by dissolving 0.3 per cent sodium alginate in 5 per cent dextrose solution. It is adjusted to maintain a specific viscosity of 2 and a molecular weight of 15,000. This is because polysaccharides of high molecular weight, such as Dextran, have an unfavorable influence on the living body; moreover, solution of sodium alginate alone has been verified as having a somewhat ill effect on hemotasis.

When mature rabbits were bled at the rate of 20 cc. per kilogram of body weight in six minutes, the blood pressure dropped rapidly. With the systolic pressure at 100 prior to bleeding, the changes of blood pressure appeared as in Figure 2. The rabbits were then given transfusions of Ringer's solution, dextrose solution, alginate saline solution and Glyco-Algin respectively, in an amount equal to the blood removed, and the results compared with data on groups that received no transfu-

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Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-13, 1956.

Submitted for publication Sept. 12, 1956.

of the stomach. To ward off the secondary postoperative bleeding that is common in such cases, a portacaval shunt is performed three or four weeks later, unless contraindicated by ascites that is unresponsive to medication. For the shunt operation, the patient is placed in semilateral position, and a long, oblique thoracoabdominal incision is made from the umbilicus through the eighth interspace well posterior to the lumbar muscles. A splenoportogram is deemed advisable as soon as the patient is under anesthesia; if it proves unsatisfactory, a portal portogram is made. If the portal vein is patent, the thoracoabdominal incision is made on the right side; if it is not, it is made on the left. If the spleen is small and anastomosis of the splenic vein with the left renal vein proves unfeasible, one has the alternative of resecting the lower portion of the esophagus and the cardiac end of the stomach.

Intestinal Impaction After Partial Gastrectomy

Two cases of intestinal obstruction so firmly impacted as to require surgical intervention are reported by J. Thompson Rowling in *The Lancet*, Aug. 11, 1956. In both instances, the bolus consisted of orange, in one patient unchewed fruit as well as the pith, in the other chewed fruit and mostly pith. In one patient the obstruction was approximately midway between the duodenojejunal flexure and the ileocolic valve; in the other one mass was lodged approximately 2 feet 6 inches from the ileocolic valve and a smaller mass 1 foot proximal to the first. The author suspects that many cases of intestinal obstruction following gastrectomy may escape notice because they are transitory and symptoms subside before medical attention is received. He suggests that the provision of a Hofmeister valve as well as a small stoma, with a circumference smaller than the jejunum, might be a preventive measure in the performance of a gastrectomy. In the two cases here reported, enterotomy was performed and, by way of a small longitudinal incision in the intestine, the bolus was broken up and extracted in pieces with artery forceps. This permitted transverse closure of the small incision, without encroachment on the lumen of the intestine.

Operation for the Relief of Cerebral Palsy

Dr. Irving S. Cooper, appearing before a gathering of the American Association of Cerebral Palsy, reported recently on the promising results he and his colleagues at St. Barnabas Hospital for Chronic Disseases, New York City, had observed in the surgical treatment of children with cerebral palsy. They had applied chemipallidectomy to 30 cases, in patients, aged between 8 and 19 years, with manifestations of chorea, chorea-athetosis, tension-athetosis and dystonia musculorum deformans. In the few instances in which the technic was tested on patients with congenital cerebral palsy, the purpose was to relieve the involuntary muscular movements. This operation, which has been performed in the past to relieve parkinsonian tremors and rigidity, produced favorable results in two-thirds of the patients, with the best outcome among those who had athetosis or dystonia. Predictions about the permanency of the results would be premature, but hyperkinesis and dystonnia have been relieved for a year and a half and longer in several patients in this group.

The results of chemipallidectomy were most striking in a girl, aged 12, with dystonia so severe that to ensure rest she had to be tied to a wheelchair and kept under heavy sedation to offset the constant, violent movements of the limbs. Bilateral chemipallidectomy enabled the child to walk, run, dance and ride a bicycle.

In chemipallidectomy, absolute alcohol is introduced into the globus pallidus through a polyethylene catheter which is not removed for 7-10 days. The dramatic results of the treatment suggest that the interior portion of the lenticular nucleus is involved not only in the tremors and rigidity of Parkinson's disease, but in the factors that may influence the problem of limitation of rapid transfusion.

These results were also verified by myocardiographic studies. While rapid transfusion adversely influenced the width of the myocardiogram, slow transfusion of 10 minims (Fig. 6) of Glyco-Algin, ninety minutes after bleeding, resulted in readings one and three-tenths as wide as those taken prior to bleeding, indicating efficient contraction of the heart.

The influence of Glyco-Algin transfusion on renal function is as follows:

1. Though the value for urine clearance increased gradually after transfusion of Glyco-Algin and returned to normal after twenty-four hours, the variation was within the normal physiologic range; hence it may be concluded that Glyco-Algin has no adverse influence on the kidney.

2. Though the output of urine decreases temporarily after bleeding, it gradually increases as transfusion is started slowly (10 minims; see Fig. 7) and is restored to normal after thirty minutes. In addition, a further increase was observed parallel with the transfusion of Glyco-Algin. When rapid transfusion was administered with alginate saline solution, anuria occurred after sixty minutes. Both Glyco-Algin and Ringer's solution tended to reduce the amount of urine, although a temporary increase was observed in the early stages.

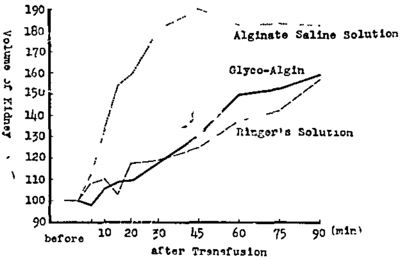

Fig. 9.—Enlargement of kidney with rapid transfusion.

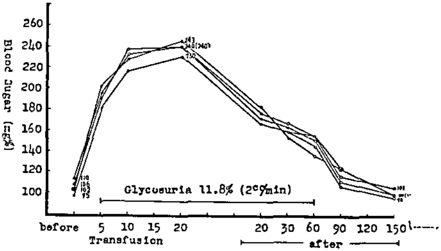

Fig. 10.—Effects on blood sugar level.

3. As to enlargement of the kidney, this was noted in all cases of transfusion. In the case of slow transfusion (10 minims) of Glyco-Algin a 10 to 20 per cent increase

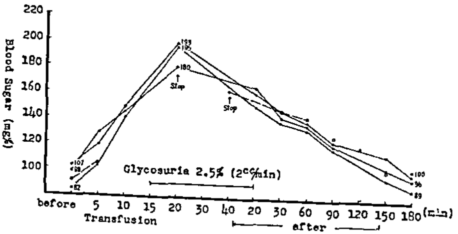

Fig. 11.—Comparative effects of Glyco-Algin and other transfusion fluids on blood sugar level in slow and rapid transfusion.

of the stomach. To ward off the secondary postoperative bleeding that is common in such cases, a portacaval shunt is performed three or four weeks later, unless contraindicated by ascites that is unresponsive to medication. For the shunt operation, the patient is placed in semilateral position, and a long, oblique thoracoabdominal incision is made from the umbilicus through the eighth interspace well posterior to the lumbar muscles. A splenoportogram is deemed advisable as soon as the patient is under anesthesia; if it proves unsatisfactory, a portal portogram is made. If the portal vein is patent, the thoracoabdominal incision is made on the right side; if it is not, it is made on the left. If the spleen is small and anastomosis of the splenic vein with the left renal vein proves unfeasible, one has the alternative of resecting the lower portion of the esophagus and the cardiac end of the stomach.

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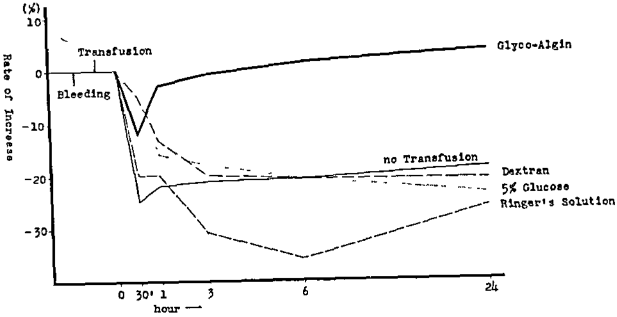

Fig. 16.—Effects on erythrocyte count.

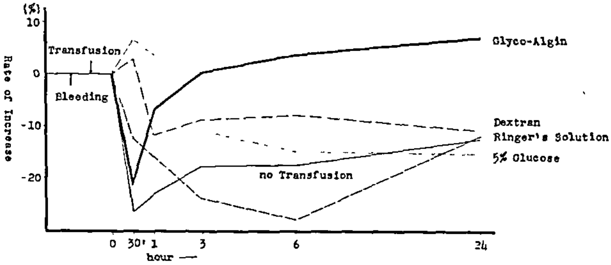

Fig. 17.—Effects on total protein content of blood plasma.

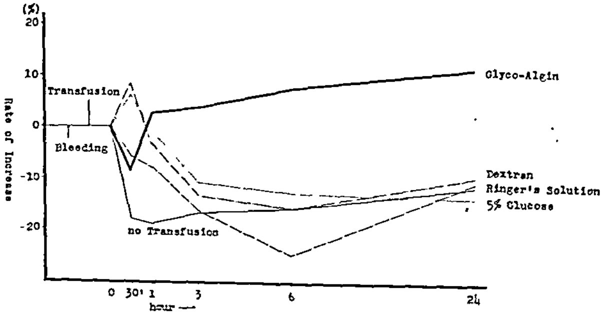

Fig. 18.—Effects on total circulating blood volume.

medical care, and that, despite the need of 38 per cent for specialized institutional care, accommodations for such care were almost nonexistent.

Results of Total Cardiac Arrest in Operations on 50 Patients

Attempts to close large interatrial defects, to repair interventricular septal defects, to excise obstructive muscle preventing outflow from the right ventricle and to correct aortic stenosis or mitral insufficiency have been made with the aid of total cardiac arrest on 50 patients at the Cleveland Clinic. The results were discussed by Dr. F. Mason Sones Jr., before the Section on Cardiovascular Surgery of the American Heart Association. The technic of cardiac arrest has been applied since February 1956 for intervals from seven to fifty-eight minutes per operation. Of the patients involved, the youngest was three weeks old and the eldest 54 years old. The longest stoppage of heart activity was required by the oldest patient of the series who underwent successful surgical correction of a defect of the mitral valve.

About two-thirds of the operations were successful. Attempts to correct complete transposition of the great vessels in three children proved unsuccessful, and the patients died.

The technic calls for the dilution of 2 cc. of a 50 per cent solution of potassium, diluted to 20 cc. with the patient's blood, and injection of the mixture into the occluded aorta above the coronary arteries. A pump oxygenator is used to perfuse the coronary arteries for the restoration of the normal heart beat. Electrical stimuli and similar devices are not required, for the oxygenator alone is an adequate aid for the resumption of normal rhythm within thirty seconds to ten minutes.

The Grafting of Skin from Bovine Embryos

Some months ago Northwestern University Medical School reported the successful use of calf bone as a grafting material for the repair of bone defects. Now the U. S. Naval Medical Research Institute and New York University jointly report on the successful grafting of the skin of bovine embryos as temporary dressings for defects of the skin. Such zoografts were observed to speed the healing processes of the body, encouraging epithelization as well as providing tissue covering for the defect. The tissue has been tested upon 8 volunteers with surgically produced defects or with wounds resulting from reconstructive operations.

The greatest advantage in the use of such grafts is their widespread availability. Of comparable importance is the fact that organic fluids essential to healing are not absorbed by the embryonic tissue. Zoografts are taken from the intact uteri of freshly slaughtered cows, subjected to bacterial culture and quick-frozen and stored like homografts.

The report on zoografts was prepared for the annual meeting of the Association of Military Surgeons by Drs. Blair O. Rogers and John M. Converse and Lt. Commander A. N. Silvetti.

Prosthetic Hip to be Tested

The Ohio State University Medical School, following studies on cadavers, has adapted a prosthetic hip, originally described by Col. Harry A. Gorman of the U. S. Air Force, for installation in the human being. Such a device has been tried on 53 dogs during the past two years with no adverse results. It will be useful in the management of many kinds of defects, congenital and acquired, and promises hip movements that are entirely free from pain. The device was inspired by the universal joint of the automobile and consists of a ball and socket, which has a retaining rim that makes motion possible with no dislocation of parts. The ball of the device is anchored to the femur and has a stem locking to a pin within the femoral medullary canal. It fits inside a socket that is attached to the pelvic bone with three toggle bolts. Both the ball and the socket are made of an alloy of chromium and cobalt, and the ball part is hollow. Because articulation occurs between two metallic parts, the possibility of pain is eliminated.

method often used earlier, i.e., "pulling the urethra" through a canal made in the glans, with a pointed scalpel, originated with Thompson-Walker. Today hypospadias glandis can be cured by the creation of a new urethra. All operations aiming at correction of the original urethra by pull-through or relocation are obsolete, because no improvement is thereby made in the deformity of the penis.

A brief summary of the development of the hypospadias therapy and a description of a new method of operation, in which the urethra is replaced by means of transplantation of the mucous membrane of the bladder.

History.—Nove-Josserand, in 1897, used scrotal grafts for replacement of the deficient urethra. He used Thiersch graft lobes, which he transplanted into a canal of the pars pendula prepared in advance. About 1900, surgery made sensational progress in the field of tissue plastics. What was virtually a race, aiming at the best substitute for the deficient urethra, began at once. Creevy stated that scrotal skin was unsuitable for making a urethra, since hair grows into it, forming stones. Edmund then used skin from the prepuce, with success. Nesbit and also Davis used the skin from the dorsum of the penis, which they transplanted to the ventral surface. Some surgeons used skin from the penis as well as from the scrotum. Many satisfactory results were obtained, since the skin in this region is hairless, pliant and elastic. The use of pedicled skin grafts from the surrounding skin was attempted, but this was soon given up, since the skin of the prepuce was more easily available. Russell formed a tunnel of the skin of the prepuce and later pulled the glans through.

Free transplantations, which at one time were performed frequently, have been dropped altogether. A great many experiments have been made to transplant entire cavernous organs, such as the appendix, the ovarian tubes, or a vein; skin also has been used for making a new urethra, as well as Thiersch's lobes and the vagina. Good initial results were obtained with all this material, but this kind of transplant was absorbed and replaced with scar tissue. Masson used Thiersch's lobes with some success but encountered many failures due to disruption of the transplant by coagulated blood. Schieden, in 1919, was the first to use the urethra from another human being. Lexer, in 1911, made use of the appendix. In 1910, Tanton attempted to use a vein for transplantation and Legueu experimented with the *mucous membrane of the vagina.* He succeeded in making a canal but abandoned the method, as the vagina could not be adapted to the constitution of a urethra. All attempts at using extraneous material are doomed to failure since such transplants are biologically intolerable.

The most common operations used at present include:

Hamilton Russell's "stole" operation. This is performed in four stages, in which an incision is made through the frenum that binds down the penis, and the glans is tunneled with a tenotomy knife. Incisions are then made laterally in two lines; a strip of prepuce like a clergyman's stole is thus marked out, and finally the flaps forming the urethra are sutured. Davis uses the skin from the dorsum of the penis and adds the prepuce if needed. Ombredanne's operation is recommended by some surgeons. Bidder incises the ventral aspect of the penis on both sides, forming the urethra from the skin of the penis and the floor from scrotal skin. This operation is adequate for peniscrotal hypospadias. Denis-Browne uses the skin of the penis, which is supposed to possess, among other advantages, the quality of not forming keloids. In addition, he
the prepuce. A perineal

IN MEMORIAM

SOICHI YANAGI, M.D., F.I.C.S.

1890-1956

Soichi Yanagi, the distinguished Japanese surgeon and a dedicated member of the International College of Surgeons, died at the age of 66 in Tokyo on August 6, 1956. A native of Kobe-City, he had his preliminary education at The Seventh High School of Japan, from which he was graduated in 1911. He tudied medicine at The Medical School of Tokyo Imperial University, which awarded him the degree of Doctor of Medicine in 1916.

Immediately upon his graduation as a medical doctor, he began his graduate tudies in the Second Department of Surgery of the Medical School of Tokyo mperial University. After four diligently spent years of training there, he tudied in the Department of Surgery of Keio University in Tokyo from 1920 o 1921. During his five years of graduate studies in Japan, he served as an ssistant in the Tokyo University Hospital from 1916 to 1920 and as an instruc- or at Keio University Hospital from 1920 to 1921. And from 1921 to 1923, he ursued his surgical studies in Germany and France, gaining knowledge of Western surgical procedures and practices.

His European studies completed, Dr. Yanagi was named Assistant Professor f Hokkaido University Hospital near Tokyo in 1923, and shortly thereafter was advanced to the status of full professor, which he held until his retirement at the end of 1951, when he was named Professor Emeritus of Hokkaido University. In 1951 he was named Chief Surgeon of the National Sagamihara Hospital, a post in which he continued to serve until his death.

Dr. Yanagi was one of the early members to join the International College f Surgeons from Japan after World War II. He was to a large degree responsible for the organization of a Japanese Section of the College and was a char- er and founding member of the Section.

In 1951 he represented Japanese surgeons at the Annual Assembly of the United States Section in Chicago. His contribution to the scientific program of the Assembly dealt with thermal effects on the healing of wounds and, specifically, the effect of hot spring-baths on such healing.

Among Dr. Yanagi's published works were "The Surgical Treatment of ronchial Asthma," 1917; "Experimental Studies of the Influence of Low Tem- eratures on the Living Body," 1924; "The Experimental Study of the Heal- ng of Wounds," 1925, and "The Textbook of Surgery," 1950.

Dr. Yanagi's untimely death has been a severe blow to the Japanese Section f the College. In the six short years that he was associated with the Interna- onal College of Surgeons, he made many friends with members of the surgical rofession throughout the world, and the loss is painful to everyone who had ad the privilege of becoming acquainted with him.

from the former urethra and the new vesical graft, a graft was taken from the scrotum to cover the new urethra and was sewed onto it. (Fig. 1*E*). When the bladder healed, it was necessary to put a catheter into the newly formed urethra. As a result of this, urethritis and pain occurred; it was obvious that the child could not tolerate a catheter, so a "boutonniere" was created and the catheter removed from the urethra. Through this passage undisturbed healing occurred and the final result was satisfactory (Fig. 1*G*). The boy has been under observation for a long time and urinates in a good stream without difficulty. Dilation of the urethra was performed without difficulty, and no stenosis or stricture has occurred in seven years.

It was my impression at first that this operation was suitable only for children, in view of the fact that changing states of fullness of the corpora cavernosa would disturb such a plastic procedure. Successful results, however, have been obtained in 2 adult patients. The case of 1 of these is here reported.

CASE 2.—A 34-year-old man was admitted to hospital with a history of gonorrhea ten years earlier, followed by prostatic abscess that ruptured into the rectum during an examination with the patient under anesthesia. Both urine and feces had been diverted from their natural passages. In addition to the fistula between the rectum and the bladder, there was hypospadias of the pars pendulla of the penis (Fig. 2*A*). Many operations had been done to close the hypospadias, but without success, so that when I first saw the patient the whole penile section was transformed into thick scar tissue, with the large hypospadic opening of the urethra (Fig. 2*B*).

Operative Technic.—The rectovesical fistula was first repaired by cutting circularly around the anus, the incision penetrating in all directions into the periprocytic tissue. The rectum was freed and the sphincter isolated. The rectum was brought out through the anus, so that the old scarred fistula in the rectum was placed exterior to the anus. The sphincter was sutured carefully around the rectum and the exteriorized portion cut off. (This was a modification of the Rochenegg operation.) A catheter was introduced into the bladder, and in about four weeks the rectum was completely healed. The hypospadias operation was then performed in the manner described (Fig. 2, *C* and *D*). The patient was followed for eight years and has had no trouble with urination or with rectal complaints since the last operation. When he was last examined erection and ejaculation were normal, the urine was clear, urination with a good stream was habitual (Fig. 2, *E* and *F*). Periodic dilation was done after the operation.

COMMENT

The mucous membrane of the bladder has been used as a transplant in the cure of hypospadias because of the good nutrition of the graft and its physiologic ability to conduct urine. It is not necessary, in this operation, to divert the urine through a perineal urethrostomy, but it is done through a cystostomy, which also has the advantage that the material for the graft is immediately at hand. There is no other organ so rich in mucous membrane, so elastic and so much inclined to heal easily as the bladder. Modern methods of operation take this quality into consideration. It is possible to extirpate much of the bladder and find, a few weeks later, that the walnut-sized remainder has become once more an organ of almost normal capacity. One should not hesitate, therefore, to cut large grafts from the anterior wall in order to obtain surplus material for a plastic operation. Although it is true the tubular graft material does not usually shrink—which is quite a contrast to what occurs with a free transplant—it is a good thing to suture without tension and to build the tube without a drain. The mucous membrane of the urethra and bladder will easily heal per primam, in view of the fact that they are cognate mucous membranes and do not have to perform any function that is new to them.

The nutrition of the graft is ample, so that there is no danger of necrosis. Severe purulent cystitis is a contraindication to this procedure, but mild cystitis or mild edema of the mucous membrane need not

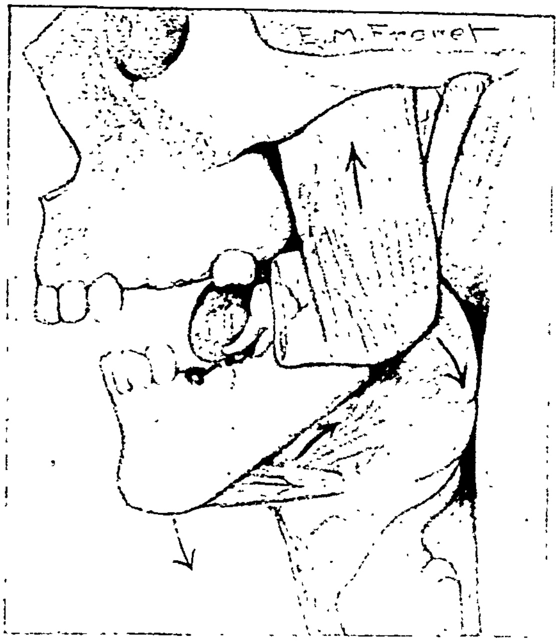

Fig. 1.—Typical distortion after bilateral mandibular fracture. Masseteric spasm pulls proximal fragments upward. Gravity and loss of control of distal fragment cause prolapse of tongue on airway.

ment. In the light of these thoughts no amount of repetition of such an important subject can be excessive.

General Considerations. — Needless to say, coexisting serious conditions, such as shock and injury to vital organs, should receive primary consideration in any case of facial trauma. It is not within the scope of this paper to enter into a detailed discussion of such treatment, which by and large is standard throughout the world.

Brief experience in the handling of such cases should convince anyone that no individual case can be fitted to a textbook illustration or explanation. Do not fit the patient to the book. The surgeon should learn to handle what is available to him and, within the bounds of physiologic response to injury, use his imagination in discharging a dual responsibility; not only to restore cosmetic normality but also proper function.

The *sine qua non* of reconstruction surgical technic is gentle, atraumatic handling of tissues. Every bite with a large toothed instrument is that much more microscopic insult added to the trauma already present. Tissues should be handled with small skin hooks or small plain forceps. The finest pointed hemostats should be used, one should clamp as little tissue as possible and tie off bleeders with as fine a tie as is compatible with the situation. All sponging should be firm but gentle, and rubbing of tissue should be avoided. Gentleness in the handling of contused flaps of skin can spell the difference between a good result and a poor one. Complete hemostasis must be achieved, because hematoma is an unnecessary and dangerous complication. Epinephrine should be used with great care, in recognition of what will happen when its hemostatic effects wear off. It should never be used in the treatment of injuries of the fingers, owing to the danger of losing a digit from vasospasm.

Closure under tension produces poor scars, and undermining of wound edges, if necessary, should be liberal.

Specific Considerations.—The first consideration in a case of craniofacial trauma is the presence of an adequate airway. Very often concomitant fractures of the facial bones, especially the mandible, cause loss of control of the tongue, which falls back on the epiglottis and shuts off the airway (Fig. 1). One should not be panicked into doing an immediate tracheotomy. Simple traction on the retrocessive tongue will often result in dramatic relief. Nevertheless, as a statement of general philosophy, it can be said that if after intelligent evaluation of the situation there is any question in the surgeon's mind as to the need of a tracheotomy, one should by all means perform it, since it is much safer to err on the positive side of this question.

Hemorrhage must be controlled. This

many of the complications encountered in the past should be lessened. General anesthesia seems to have definite advantages over local anesthesia with regard to complications.

In 1952, Abbott, Gay, and Goodall[5] reported the complications in 174 cerebral arteriographic precedures. Most of these were of cerebral vascular origin, with *temporary or permanent* hemiplegia, aphasia, hemianopsias, convulsions and even death. Extracranial complications were cervical hematoma necessitating tracheotomy, severe irritation of the soft tissue, with fever and pain, hoarseness, transitory diffuse punctate hemorrhages of the face and neck and radiculitis of the cervical roots (from the taking of a vertebral arteriogram). Horner's syndrome, temporary and permanent, was occasionally encountered. The authors considered the complications due to mechanical factors, vasospastic factors, disturbance of the blood-brain barrier, air or blood clot embolism and sensitivity to drugs. Hypaque has not been used long enough to justify evaluation of the complications it may cause, and the extracranial complications should be essentially the same; the more serious cerebral complications, however, should be encountered less often.

With better angiographic technic aiding in the diagnosis of intracranial aneurysmal lesions, improved surgical methods have necessarily followed. Better surgical technic, careful selection of patients and the time of operation, and hypotensive anesthesia have all helped lower surgical mortality and morbidity rates. As time goes on, experience with the management of these lesions will certainly lead to many more cures.

Saccular intracranial aneurysms may be grouped, according to location, into those of the infraclinoid part of the internal carotid artery, those of the supraclinoid part of the internal carotid artery, those on or about the circle of Willis, those of the peripheral part of the major cerebral vessels and those in the posterior fossa. The arteriovenous malformations will be briefly discussed.

The symptoms and treatment of these saccular aneurysms vary with their various sites and will be discussed according to location.

Infraclinoid Aneurysms of the Internal Carotid Artery.—Infraclinoid aneurysms of the internal carotid artery occur on the cavernous part of the artery. These aneurysms are usually large, saccular lesions, causing symptoms because of compression of the adjacent structures or by rupture into the cavernous sinus, produc-

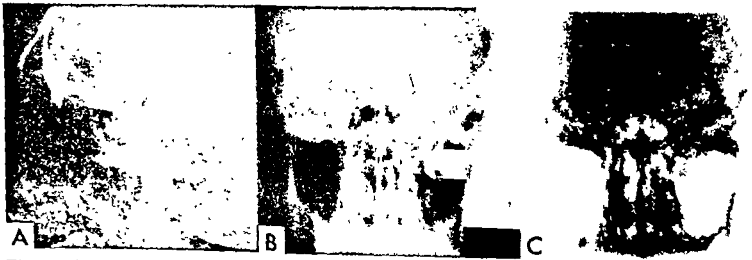

Fig. 1 *(Case 1)*.—*A*, arteriogram showing arteriovenous fistula between intracranial carotid artery and cavernous sinus. (Note large amount of dye in the region of cavernous sinus and dilated ophthalmic vein.) *B*, left carotid arteriogram showing dye in cavernous sinus (lateral view). *C*, normal right cerebral arteriogram of same patient for comparison.

nose; (4) bare his teeth and whistle, and (5) tighten his platysma. In this way paresis in any of the divisions of the pes anserinus may be detected.

Rhinorrhea is indicative of a fracture through the ethmoids; otorrhea, of a fracture through the basilar portion of the sphenoid or of the temporal bone. Rhinorrhea is a clear contraindication against any vigorous maneuvering of the patient's face, since an already dangerous situation can easily be converted into a fatal one by inadvertently driving irregular bony projections into the cerebrum, not to speak of increasing the possibility of meningo-encephalitis.

The mouth should be thoroughly inspected for broken or loose teeth. These should be extracted to prevent aspiration.

It is easy and sometimes embarrassing to assume, in the course of emergency treatment, that blood in the hair has merely run down from the obvious facial injuries. In this manner severe scalp lacerations, with underlying skull fractures, may be missed. It will, therefore, benefit the examiner to observe and palpate the scalp carefully.

Treatment of Injuries.—It is generally accepted that an acute traumatic injury of the face should, all other factors being equal, be repaired ideally within two hours after the time of injury. One may assume that such an injury by its very nature is contaminated, usually grossly, and that with the passing of the hours the wounds become infected. In these days of antibiotics and chemotherapy the problem is, of course, vastly more simple than in the days when the skill of the surgeon and plain luck played major roles in the outcome of the case. Nevertheless, in our opinion, the most liberal time limit during which one should undertake the primary repair of soft tissue wounds is eight to twelve hours after injury; after this, we should seriously consider packing the wound open, with eventual secondary repair in mind.

The importance of thorough cleansing of wounds cannot be overemphasized, not only from the standpoint of reducing morbidity but with a view to avoiding the completely unnecessary traumatic tattooing of the skin. It is mandatory that all wounds should be thoroughly irrigated with copious amounts of soap and water. Ground-in dirt and débris must be eliminated with a stiff brush, a maneuver more easily executed in a fresh wound than in an old one. All wounds should be carefully probed for débris, particularly glass, which is easy to miss (Fig. 2*B*).

The next step is, of course, closure of the wounds as simply and rapidly, and yet as carefully, as circumstances will allow. Without detracting from the importance of débriding contused and devitalized tissue, one should reemphasize the fact that from the point of view of the reconstructive surgeon only that tissue which is obviously devitalized should be excised. Every effort should be made toward preserving every bit of tissue whose survival is not clearly in doubt, because at the time of secondary revision all this tissue is invaluable in the reconstruction of the part.

The best débridement is obtained through simple excision, with a sharp scalpel, of the contused edges of the wound, care being taken to cut at right angles to the plane of the skin and out to viable, bleeding normal tissue (Fig. 3, *A* and *B*). The best plan for repair is always the simplest plan. Any number of tricky ways to close a wound may be found described in innumerable texts, but it is only sad experience that teaches the surgeon to avoid maneuvers and to depend, if circumstances allow, on a simple, elliptic excision and straight line closure.

If possible, excision should be planned so as to follow Langer's lines. These are the natural lines of tension of the skin.

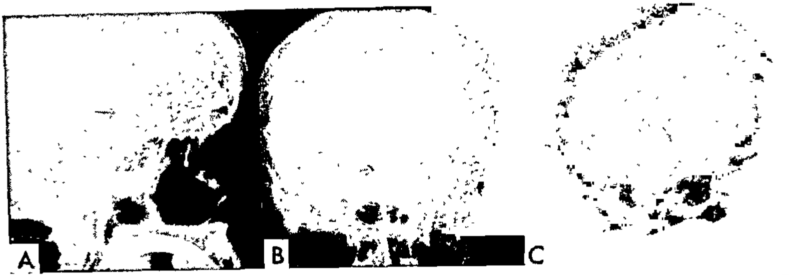

Fig. 5 *(Case 6)*.—*A*, right arteriogram showing aneurysm of anterior communicating artery. *B*, anteroposterior view. *C*, oblique view.

days after the arteriographic investigation, with complete relief of pain. There was no further drooping of the eyelid, but the inability to abduct the left eye persisted. This patient was seen one year after the operation. She had remained free of pain, but the abducens paralysis was still evident.

Supraclinoid Aneurysms of the Internal Carotid Artery.—Walker,[15] in reviewing 285 cases of intracranial aneurysms, observed that 71 verified aneurysms of the internal carotid artery had occurred above the clinoid process. He noted that headache or pain in the head was the most common complaint and was present for periods varying up to many years before the development of a subarachnoid hemorrhage, which occurred in 46 of the 71 patients. Half of the patients who had subarachnoid hemorrhages had no warning. In Walker's group of patients, failing vision and hemiplegia were the next most common symptoms. Diplopia is fairly frequent and is most often due to involvement of the oculomotor nerve but may be due to involvement of the trochlear or abducens nerve. Occasionally, papilledema is present.

Surgical treatment of supraclinoid aneurysms of the carotid artery consists mainly of cervical ligation of the internal carotid artery, which is probably inadequate alone; or this combined with ligation of the internal carotid artery intracranially; and clipping of the neck of the aneurysm.

Case 4 illustrates a large ruptured aneurysm of the supraclinoid internal carotid artery that was treated by the trapping method. The internal carotid was ligated in the neck, and a clip was applied to the internal carotid intracranially, distal to the aneurysm.

CASE 4.—A 63-year-old white woman had sudden, severe headache, followed in a few minutes by loss of consciousness for several minutes. Upon regaining consciousness, she complained of weakness of the right leg. Examination revealed mental confusion, weakness of the right leg and suppression of the reflexes of the right leg. A lumbar puncture done on admission revealed a pressure of 380 mm. of water, with grossly bloody spinal fluid. Routine roentgenograms of the skull were normal. Bilateral arteriographic study (Fig. 3, *A* and *B*) revealed a large aneurysm of the left internal carotid. After the arteriographic procedure this patient had mild expressive aphasia. It was decided that she could not tolerate immediate ligation of the internal carotid artery in the neck, and accordingly, several days later, the left internal carotid artery was exposed and gradually occluded with a clamp designed by Dr. Gayle Crutchfield. After three days the artery was completely occluded, without ill effects. Three days later a left frontal craniotomy was done, and two silver clips were applied intracranially to the left internal carotid, dis-

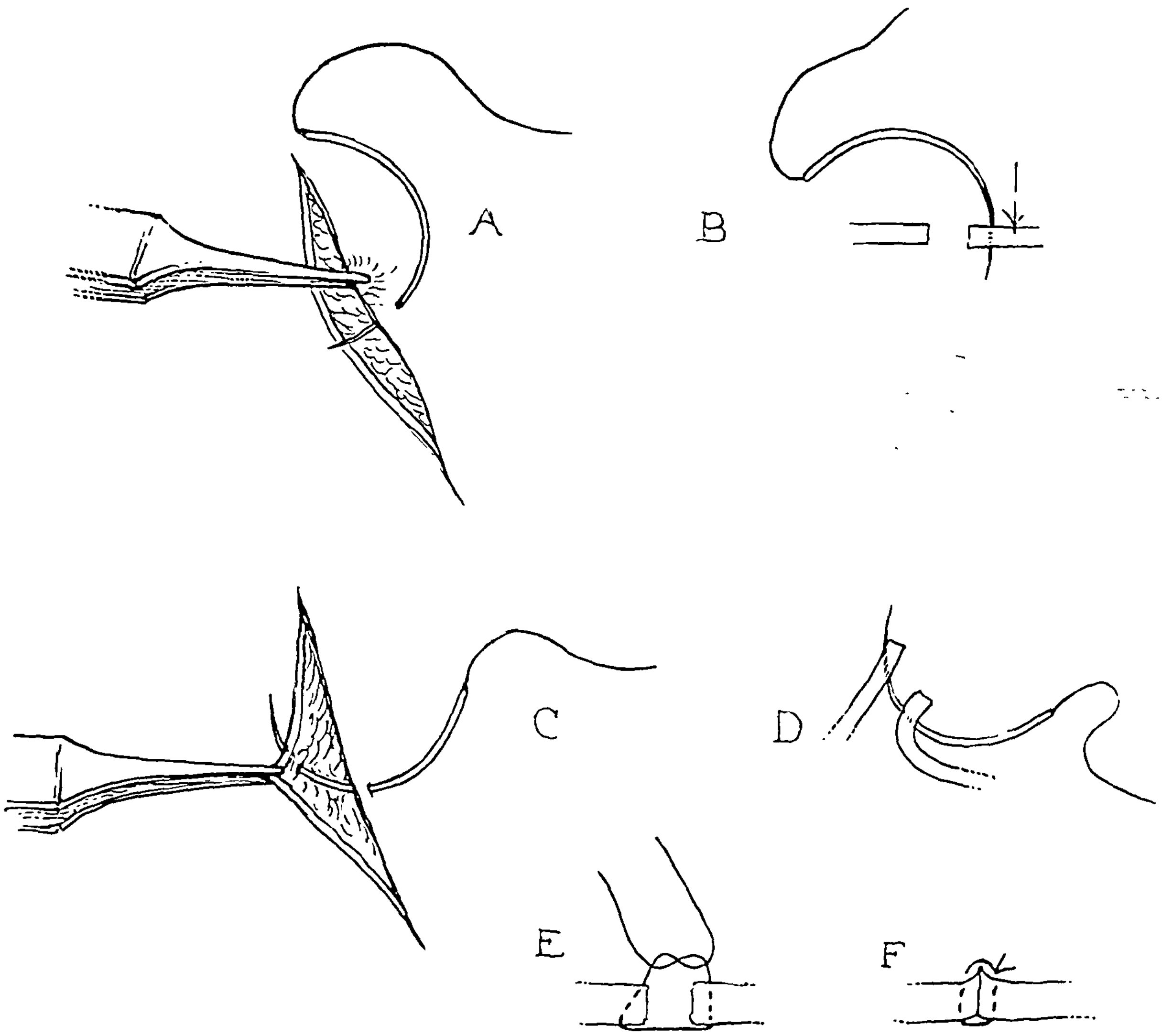

Fig. 5.—*A* and *B*, stitch passed through one side of wound so that point enters and passes through full thickness of skin before it turns under opposite side. *C* and *D*, point of needle enters opposite side of wound, farther out from the margin than its point of exit. *E* and *F*, approximation of tissue, in which slight eversion should occur.

and careful observation of the area involved will readily demonstrate their direction. Asking the patient to create an expression in the area in question will throw the skin into its natural folds, and it is parallel to these lines that excision should be electively planned. This will always make for a much better scar than one that crosses the natural lines and folds of the skin at right angles and is, therefore, subject to increased tension. In some cases exceptions must be made, as with scars that will run across a flexion surface, such as the axilla, the anticubital fossa, the popliteal space or the ventrum of fingers. These scars will cause "fiddlestring" flexion contractures.

If the repair is to be carried out with local anesthesia, we prefer infiltration with 2 per cent xylocaine with epinephrine. We consider this agent ideal in that it possesses excellent diffusibility, low toxicity, adequate duration of effect and, above all, instantaneous action. Although headache and coma recurred. A repeated spinal puncture revealed a pressure of 350 mm. of water, with bloody spinal fluid. Bilateral carotid arteriograms (Fig. 7) were taken, and an aneurysm was observed on the left anterior cerebral artery, which filled from the left injection. There was depression of the left anterior cerebral artery, suggesting a mass lesion. A left frontal craniotomy was done, and a large hematoma was observed in the frontal lobe, extending into the anterior horn of the left ventricle. The hematoma was removed by suction; a clip was applied to the neck of the aneurysm, and the aneurysm was removed. The postoperative course was stormy for several days, and the patient had pronounced weakness of both legs for approximately two weeks. When seen two months after discharge from the hospital, he was normal mentally and had no neurologic deficits.

Aneurysms of the posterior fossa are rare, and I have never encountered one except on postmortem examination. The basilar artery is frequently involved, producing multiple involvement of the cranial nerves. Diagnosis can be established by vertebral arteriographic study. Rizzoli and Hayes[22] reported the successful removal of a berry aneurysm of the left posterior inferior cerebral artery in the case of a man who had a subarachnoid hemorrhage. The aneurysm was discovered on operation after a ventriculogram had revealed hydrocephalus with a shift of the fourth ventricle to the right.

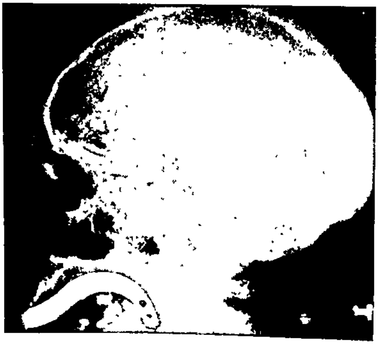

Fig. 7 *(Case 8)*.—Aneurysm of peripheral part of left anterior cerebral artery and depression of anterior cerebral artery due to hematoma of frontal lobe.

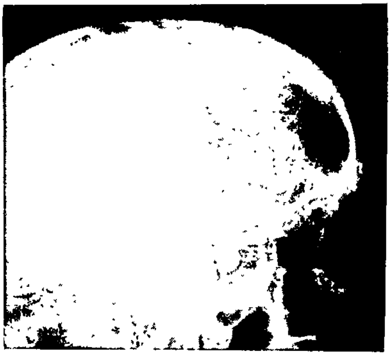

Fig. 8 *(Case 9)*.—Arteriovenous aneurysm and small berry aneurysm in right frontal region. Note depression of anterior cerebral artery by an intracerebral hematoma.

Arteriorvenous Malformations.—Arteriovenous malformations, although they may occur in other areas, usually occur in the region of supply of the middle cerebral artery, though rarely in the posterior fossa. These lesions are most often on the cortex, with subcortical extension. They usually produce jacksonian or generalized seizures. The aneurysm ruptures and produces a subarachnoid hemorrhage in about 20 per cent of the cases. A patient with previous epilepsy in whom sudden subarachnoid bleeding occurs should be suspected of having an arteriovenous malformation. The bleeding may be entirely subarachnoid, or it may be associated with an intracerebral clot. Treatment consists of symptomatic therapy with anticonvulsive medication or operative intervention. Operative measures vary from cervical ligation to direct attack on the aneurysm. The smaller lesion may be excise · excision of panicked into attempting complex maneuvers which, even in expert hands, are frustrating, for these may end in disappointment and can be exceedingly dangerous.

After the fragments have been repositioned, they should be immobilized as well as possible. It is recognized that this is difficult to accomplish when one is dealing with injuries about the face, but much can be gained with a well-placed Barton bandage or with such simple equipment as coat-hanger wire, tape, tongue depressors and a little ingenuity.

External fixation apparatus for maintenance of displaced bony fractures, which is costly, complicated and in most cases impractical, should be shunned. These devices not only work themselves loose before their mission is accomplished but can also produce osteomyelitis, which is otherwise avoidable. There are few facial fractures that cannot be reduced with the judicious use of dental arch bars, rubber bands, Steinmann's pins, stainless steel wire, and, if necessary, a plaster of paris cap with appropriate stiff wire outriggers for traction.

When there is a definite mandibular fracture with loss of control of the tongue, particular care should be taken to maintain a proper airway. An unattended patient can easily strangle on blood clots and salivary secretions. The patient should, therefore, always be placed on the side or the abdomen. Final treatment should be instituted only in a center with personnel and equipment to handle such cases.

2. The blood and lymphatic supply to the head and neck is extremely rich, and collateral circulation is abundant. For this reason it is seldom necessary to leave a drain in the wound. Infection is less likely if the proper principles of surgical care have been observed.

3. If the patient's injury prevents him from closing his eyelids, or if a pressure dressing is to go over the eyes, the eyelids should be sutured together with a simple, horizontal mattress stitch. This simple maneuver will forestall the unpleasant experience of taking off the dressing and finding a corneal abrasion.

4. If there is bleeding from the posterior portion of the nasal cavity which cannot be located and controlled directly, a posterior pack will have to be inserted (Fig. 8).

5. If there is any question as to the aspiration of missing teeth, a roentgenogram of the chest should be taken.

6. All teeth in the fracture line should be extracted.

7. Through-and-through lacerations of the tongue, even of a tongue hanging on a small pedicle, should be sutured. The tongue has an excellent blood supply and amazing powers of survival.

8. If occlusive dressings are employed, beware of their effect on the severance of nerve supply. Furthermore, the axis of blood flow is forced in a principal direction, and as a result the arterial pressure will usually be greater than the venous, thus predisposing to the congestion. This accounts for the blueness of most traumatically elevated flaps of tissue. Pressure and careful periodic inspection will often be a great help. Dead whiteness, on the other hand, means arterial insufficiency, and the survival of such tissue is much in doubt.

10. Tetanus antitoxin and heavy doses of antibiotics are clearly indicated in the supportive therapy. If there have been facial fractures, a high caloric, high protein diet, supplementary intravenous feedings and parenteral vitamins should be ordered.

SUMMARY

The authors discuss the immediate emergency treatment of injuries to the

casos las lesiones mayores son imposibles de extirpar sin causar una alza en las mortalidad y *morbilidad.*

SUMARIO

Os aneurismas da carótida interna, abaixo da apófise clinóide, rotos ou não, podem ser tratados corretamente pela ligadura cervical isolada ou em combinação com a hemostasia intra-craniana. Os aneurismas supra-clinoidianos são melhor tratados pelo grampeamento.

Os aneurismas do triangulo de Willis, quando há rutura, elevam a mortalidade a 50% ou mais. A incidência de recidiva pode atingir 50% e em, aproximadamente, 70-80% os doentes morrem no segundo ataque. A taxa de mortalidade por intervenção cirúrgica sobre os aneurismas não é maior que 20%, cifra que é indiscutivelmente mais baixa que a da mortalidade entre os pacientes não tratados.

Os aneurismas das porções periféricas dos grandes vasos cerebrais não são habitualmente diagnósticados antes da rutura, período em que provocam hemorragia subaracnóide e frequentes coágulos intracerebrais. O melhor tratamento é accesso cirúrgico direto ao aneurisma, com evacuação do coâgulo e e grampeamento no colo do aneurisma. A ligadura cervical parece não exercer beneficio significativo.

As malformações arterio-venosas são, em muitos casos, tratadas conservadoramente, sobretudo quando os sintomas são apenas crises convulsivas.

As lesões menores podem ser ressecadas com êxito cirúrgicamente, mas, em muitos casos as lesões maiores são impossiveis de remover sem causar maiores mortalidade e morbilidade.

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Bei der Behandlung ist in erster Linie eine sorgfältige Reinigung der Wunde erforderlich. Die Resektion von Gewebe, das entfernt werden muss, soll unter Berücksichtigung der Langerschen Linien (der natürlichen Linien der Hautspannung) erfolgen. Die Technik des Verfassers wird an Hand von Illustrationen beschrieben.

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—*Stieglitz*

Before the days of anaesthetics, a patient preparing for an operation was like a condemned criminal preparing for execution. He counted the days till the appointed day came. He listened for the echo on the street of the surgeon's carriage. He watched for his pull at the door-bell; for his foot on the stair, for his step in the room; for the production of his dreaded instuments; for his few grave words, and his last preparations before beginning. And then he surrendered his liberty, and revolting at the necessity, submitted to be held or bound, and helplessly gave himself up to the cruel knife . . .

The *unconsciousness* of the patient secured by anaesthetics is scarcely less important than the *painlessness* with which they permit injuries to be inflicted on him. To steep his senses in forgetfulness, and throw the whole intellectual machine out of action, when if allowed to work, it only moves with a rapidity and irregularity which threatens its integrity, and permanently injure it, is to do him a service, second only to that of saving him from suffering. And to make it impossible for him to recall a scene of horror, and torture himself by going over and over all its incidents again and again, is also to do him a signal service.

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dural membrane is permitted to remain and does not stretch or yield with growth, the brain of the infant is maintained in a confined space by this envelope, and the blood supply and fluid dynamics are further embarrassed. This may eventuate in mental retardation and epilepsy.[3] From the reports of others[4] and our own observations, several generalizations can be made: 1. Subdural effusions occur in a high percentage of cases of so-called "cured" meningitis. 2. The diplococcus, the meningococcus and Haemophilus influenzae are the organisms most likely to cause subdural effusions, but other forms of meningitis may be responsible, e.g., those due to E. Typhi and M. Tuberculosis. 3. The effusion is frequently bilateral, though it may begin as a unilateral collection. 4. Finally, drainage of the subdural space is necessary and desirable and usually effects dramatic if only temporary improvement. We have observed subdural effusions in association with conditions other than the postmeningitic state: diseases of the respiratory tract and diarrhea, as well as malnutrition — a phenomenon that deserves wider recognition. As has been stated, this "new" syndrome is probably appearing more frequently nowadays since children treated with antibiotics survive and these complications have an opportunity to develop.

The cause of subdural effusions in meningitis and in nonmeningitic states still is not known. It is suspected, however, that any condition that causes a separation of the dura from the arachnoid may cause tearing of the bridging veins in the subdural space, resulting in a small subdural hematoma. The subsequent liquefaction of this blood, highly charged with protein, may exert osmotic tension upon the circulating spinal fluid beneath the arachnoid, drawing it into the subdural space and further increasing the volume. This chain of events may occur after spinal air injection in the infant under 2 years of age, as was pointed out by Smith and Carothers.[5] It may also occur after an operation for hydrocephalus, as reported by Anderson.[6]

Portion of subdural neomembrane surgically removed, showing fibrocytes, new blood vessels and lamination (hematoxylin and eosin). (Reproduced by courtesy of the Armed Forces Institute of Pathology.)

On the basis of the foregoing theory we speculated that excessive withdrawal of spinal fluid for diagnostic purposes in the case of an infant with suspected meningitis might create a similar sagging of the brain and tearing of the bridging veins that could initiate this sequential reaction.

We noted that, in many instances, unnecessarily elaborate laboratory tests required a volume of 10 to 15 cc. of spinal fluid, and that this amount was being regularly withdrawn from infants for diagnostic studies. Dr. Hattie Alexander, an authority on the treatment of bacterial meningitis in children, has stated that in her clinic it is customary to withdraw 10 to 15 cc.[7] She too reports an incidence of

The types of bacteria cultured are tabulated.

When ordinary refrigeration is used for the storage of skin in saline sponges, practical use probably should not be attempted after three weeks. Fresh grafts should be used instead, since there is a high incidence of bacterial contamination in "clean" as well as in "dirty" surgical cases.

RIASSUNTO E CONCLUSIONI

Furono allestite culture con 100 campioni di cute, di cui 38 da interventi non settici e 62 da interventi settici. Il 36,8% dei campioni del primo gruppo e il 53,8% di quelli del secondo gruppo furono positivi. La presa dei trapianti cutanei fu buona (95% o anche meglio) in tutti i casi, tranne che in 3 in cui era presente il proteo assieme allo staf. aureo non emolitico.

Si è dimostrato che anche nei casi "puliti" la cute è molto difficile da sterilizzare, ma la contaminazione batterica non è la sola causa di insuccesso dei trapianti. Nei casi "sporchi" la positività delle culture non era proporzionata al numero dei casi in cui la cute fu presa in vicinanza di ferite. Si suppone che vi sia nella cute una presenza di germi simile a quella osservata da Price nella milza anche quando le emoculture sono negative. Le culture di cute possono essere utili per valutare la batteriemia nei grandi ustionati.

Quando si usa la refrigerazione per la conservazione della cute, il suo impiego non deve essere ritardato oltre le tre settimane. Si dovrebbero usare trapianti freschi, a causa della grande facilità all'-inquinamento di essi.

RÉSUMÉ ET CONCLUSIONS

L'auteur a procédé à la culture de 100 prélèvements de peau; 38 provenaient de "cas chirurgicaux aseptiques," 62 de "cas chirurgicaux septiques." 18 (36,8%) des premiers prélèvements et 34 (54,8%) des seconds étaient positifs initialement. La "prise" des greffes épidermiques a été bonne (95% et plus) sauf dans 3 cas contenant des protéobacilles avec du staphylocoque non hémolytique.

Comme cela a été constaté dans les "cas aseptiques," la peau ets difficile sinon impossible à stériliser par une préparation chirurgicale de routine, mais la contamination bactérienne seule n'est pas la cause habituelle de l'insuccès des greffes. Dans les "cas septiques," l'augmentation de la pullulation bactérienne des cultures initialement positives a été hors de proportion avec le nombre des cas (16%) dans lesquels les greffons furent prélevés dans le voisinage de plaies ouvertes. Dans 10 cas de cultures devenues négatives à la suite de tamponnements, les prélèvements épidermiques montraient encore des cultures positives. L'auteur pense qu'il se passe peut-être avec les bactéries de l'épiderme un fait similaire â celui observé par Price dans la rate, même lorsque les cultures du sang sont négatives. Les cultures épidermiques peuvent être utiles pour évaluer la bactérémie des grands brûlés. L'auteur montre un tableau des divers types de bactéries.

Les fragments congelés (éponges salines) ne devraient pas être utilisés après un délai de trois semaines. Il faudrait donner la préférence à des greffons frais du fait de l'incidence élevée de la contamination bactérienne dans les "cas chirurgicaux aseptiques" aussi bien que dans les cas "septiques."

SUMARIO E CONCLUSOES

Foram cultivadas cem amostras de pele. Trinta e oito foram obtidas de "casos cirurgicos não contaminados" e 62 de "operados infectados." Dezoito (36.8%) das amostras de casos não infectados e 34

TABLE 1.—*Myelographic Diagnosis*

	Total		*Male Patients*		*Female Patients*	
Correct Myelographic Diagnosis	*Cases*	*Decisions*	*Cases*	*Decisions*	*Cases*	*Decisions*
Normal myelogram, no lesion	2	2	1	1	1	1
"Positive" myelogram, 3 lesions	1	3	1	3	—	—
"Positive" myelogram, 2 lesions	9	18	5	10	4	8
"Positive" myelogram, 1 lesion	51	51	37	37	14	14
"Positive" myelogram, 1 lesion, plus 1 "false positive"	6	6	6	6	—	—
	69	80				

	Total		*Male Patients*		*Female Patients*	
Wrong Myelographic Diagnosis	*Cases*	*Decisions*	*Cases*	*Decisions*	*Cases*	*Decisions*
Normal myelogram, 2 lesions present at operation	2	2	2	2	—	—
"Positive" myelogram, no lesions present at operation	6	6	3	3	3	3
"Positive" myelogram, 1 lesion, plus 1 "false positive"	*6*	6	6	6	—	—

gerous.)

9. The roentgenologist tapes lead skin markers to identify the right side and the individual vertebrae. The surgeons don protective gowns. Lights are extinguished. Glasses are raised.

10. The location of skin markers is determined fluoroscopically and corrected if necessary.

11. The oil is located, and the table is tilted (either way) slowly and gently. It is important to keep the 1/10 ounce of oil together in a fat little globule. If the globule becomes elongated to a thin string of radiopaque material, it cannot outline any masses that may be in the area.

12. In a lumbar myelogram, examination includes the caudal sac near the second sacral vertebra and extends cephalad at least two interspaces above the location of the lesion as specified by the physician. It is kinder and wiser for the physician to tell the roentgenologist where he may expect to locate the lesion.

13. Roentgen films are taken in the anteroposterior, left oblique and right oblique views of all suspicious areas.

14. The medium is placed under the spinal needle at conclusion of the myelographic procedure. When the fluoroscopic study is concluded, the room is lighted. Such oil as can easily be obtained is aspirated. If 2 cc. is obtained, it is considered plenty indeed. If only 1 drop is withdrawn it is accepted, and the patient is "needled" no more.

15. The patient is transferred supine to a litter and then to his bed, where he remains head down for at least four hours.

Material.—This series of myelograms was taken by one surgeon, with several roentgenologists. There are 125 cases, in which 76 patients were men and 49 were women. The average age of the men was 39 years; that of the women, 37.6 years. Of the 125 myelograms, there were 101 (82 per cent) that showed filling defects; 24, or 18 per cent, seemed normal. It may be interesting that the men had 65 positives and 13 negatives. Roughly then, a positive myelogram is obtained in 8 out of 10 cases when the cases are selected and a diagnosis made prior to the roentgen procedure.

Total Reconstruction of the Ear

LYNDON A. PEER, M.D., F.A.C.S., F.I.C.S.
AND
JOHN C. WALKER JR., M.D.
NEWARK, NEW JERSEY

A CHILD born with a deformity of the external ear and absence of the ear canal and eardrum presents a problem for the family doctor or pediatrician as well as for the otologist and the plastic surgeon. The child's parents are concerned regarding deafness and the otologist is eventually called upon for an opinion regarding the hearing.

Roentgenograms are usually taken of the child's temporal bone, and these indicate that the internal ear is probably present, with evidence of a middle ear cavity and the suggestion of a bony outline in the area of the external auditory canal. Not infrequently, however, the latter may be absent, because an accurate determination with regard to the presence of an external auditory canal is somewhat vague at this early age. Some otologists advise the parents that a drum membrane may be present and that later an opening may be made in the region of the ear canal to improve the child's hearing. Others, unhappily, operate on the infant in an attempt to expose the drum membrane. This is almost always a useless procedure; moreover, it results in scar tissue formation and occasionally facial paralysis.

In such cases it is not actually difficult to make a reasonably accurate estimation of the child's hearing and the general management of the case. Our own experience with a large series of patients with deformity of the external ear and congenital meatal atresia indicates that the hearing and the deformity fit into a rather general pattern, permitting a routine of management that may be presented to the child's parents.

The Child's Hearing.—The internal ear develops separately from the middle and external ear, which develop together, and it also develops earlier. Congenital anomalies of the external ear are often associated, therefore, with deformities of the middle ear. The internal ear, however, is usually normal, so that children with absence or deformity of the auricle associated with meatal atresia usually have normal bone conduction on the side of the deformity. The psychogalvanometer may be used to demonstrate the presence of hearing on the involved side at an early age, and we utilize this test occasionally to relieve the parents' worries. Often this is not necessary, however, and assurance that the child in all probability has hearing on the involved side will persuade the parents to cease worrying and wait until the child is old enough for an accurate audiometric test of the hearing.

Infants with bilateral meatal atresia present a more difficult problem. There is always a diminution in hearing, which may be sufficiently severe to delay the time when the child begins to speak. The internal ear is usually relatively normal. The formation of a skin-lined opening into the antrum will improve the hearing and facilitate earlier speech. In gen-

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From St. Barnabas' Rehabilitation Center, Newark.

Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-13, 1956.

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llenamiento adicionales. La incidencia de defectos múltiples fué 22 por ciento. En 12 casos hubo mielogramas "falso positivos" y en 2 casos mielogramas "falso negativos," como se comprobó en la operacion.

La exactitud de los mielogramas se computó por el número de decisiones hechas con base en los mielogramas y comprobadas o no, durante la operación.

El mielograma estaba correcto en 85 por ciento de los casos.

El porcentaje de casos en que al radiólogo y el cirujano coincidieron en cuanto a la interpretación de los mielogramas fue 92.

Las indicaciones y contraindicaciones para estudios mielográficos se mencionaron. Se surgieren condiciones específicas y se delineó el procedimiento usado en la serie reportada.

◆

The great physician, Sir William Osler, who made his reputation in the United States and died at Oxford in the Regius Professorship of Medicine, was a famous bibliophile. As an impoverished medical student in Canada he began his collection with a copy of *Religio Medici* by Sir Thomas Browne and that volume was placed in his coffin at his death.

Even more than Bacon but in a very different way, Browne (1605-82) is a figure to conjure with. Profoundly religious, he was dangerously superstitious, at least as far as witches were concerned, and yet he seems to have been more subtly, penetratingly, interested in nature than was Bacon, and did more systematic observation and experiment. He was born in London, studied at Oxford and received his medical training and degree on the continent. Practicing medicine in the little town of Norwich, he kept out of the religious and political storms of the day.

His first book, *Religio Medici*, written for his own private satisfaction was first published without his permission in 1643. His fascinating and weirdly learned treatise on popular errors, *Pseudodoxia Epidemica* was published a few years later, and *Hydriotaphia* or *Urne-Burial*, and *The Garden of Cyrus* in 1658. Inspired by the discovery of some ancient sepulchral urns at Norfolk, Browne set down his wondrous reflections on funeral ceremonies, on immortality and annihilation. The final chapter may well be the most gorgeous prose in the English language.

—*Houston*

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stitches, the last one fixing what is left of the ligaments, round and uterosacral. I recover this zone with vesical peritoneum lifted in the Pestalozza manner to "blind out" the whole Douglas cavity and prevent reversal of the vaginal dome.

As I have stated, the treatment of prolapse following hysterectomy is not simple. It is therefore best to prevent prolapse in the first place. By application of the following principles, this, in my opinion, is possible:

1. Test the real value of the perineum and perform a complementary simple colpoperineorraphy during the hysterectomy if a perineal deficiency brings about a prolapse.
2. Prefer total to subtotal hysterectomy when there is hypertrophic lengthening of the cervix, especially if the ovaries are to be preserved.
3. Fix the cervical stump carefully if subtotal hysterectomy is performed, either by reimplanting the round ligaments on the stump or by performing the excellent Desmarets operation, to keep the tubes and the ovaries in their respective places and reimplant them in the surface of the stump section. This operation is possible in the surgical treatment of fibroma or even of an important infectious lesion of the tubes that does not require ablation. It offers not only excellent fixation, which prevents prolapse, but the possibility of maintaining some menstrual function.
4. In performing total hysterectomy it is still possible to fix the pedicles on the borders of the vaginal scar. It is easier to attend to this fixation during hysterectomy than to do it long afterward, when an obvious prolapse has occurred.

In order to prevent an eventual prolapse, it is useful to stitch the colic region to the bladder, which isolates the pelvis and prevents abdominal pressure on the vaginal dome. Always I operate in this way in case a vaginal drain is used.

SUMMARY

Vaginal prolapse after hysterectomy is provoked by perineal deficiency but not by perineal deficiency alone. When vaginal prolapse is clinically apparent, ordinary perineal operation is rarely sufficient.

In some cases one has either to treat hypertrophic lengthening of the cervix by complementary operation or to treat lowering of the vaginal dome by high abdominal fixation. Obliteration of the *cul de sac* of Douglas, according to the author, is the best way to solve these difficulties.

RIASSUNTO

Il prolasso vaginale, dopo isterectomia, è provocato da una deficienza perineale, ma non solo da essa. Quando il prolasso vaginale è clinicamente manifesto, ben raramente è sufficiente la sola operazione perineale. In alcuni casi o si deve correggere l'allungamento ipertrofico con una operazione o l'abbassamento della cupola vaginale con un fissazione addominale alta.

Secondo l'autore il miglior modo per ovviare a queste difficoltà è quello di obliterare il cavo del Douglas.

ZUSAMMENFASSUNG

Ein nach Gebärmutterresektion auftretender Scheidenvorfall wird durch Schwäche des Dammes aber nicht durch diese allein hervorgerufen. Wenn ein Scheidenvorfall klinisch in Erscheinung tritt, reicht eine gewöhnliche Dammoperation selten zu seiner Behebung aus.

In manchen Fällen muss man entweder die hypertrophische Verlängerung durch einen weiteren Eingriff oder das Sinken des Scheidengewölbes durch hohe abdominale Fixierung behandeln.

Den besten Weg, diese Schwierigkeiten zu beseitigen, sieht der Verfasser in einer Verödung des Douglasschen Raumes.

growth originating from the branchial arches. Supernumerary auricles are also observed in association with entirely normal ears.

A great variety of less extensive auricular anomalies may occur, the mildest type being cleft of the lobule and absence or distortion of the tragus. A lowered hair-bearing scalp line, facial weakness and hemiatrophy of the face are often present on the affected side. A patient with hemiatrophy usually has a short ascending ramus, which causes malocclusion and other orthodontic conditions.

Reconstruction of the auricle in children may begin when the child is about 3½

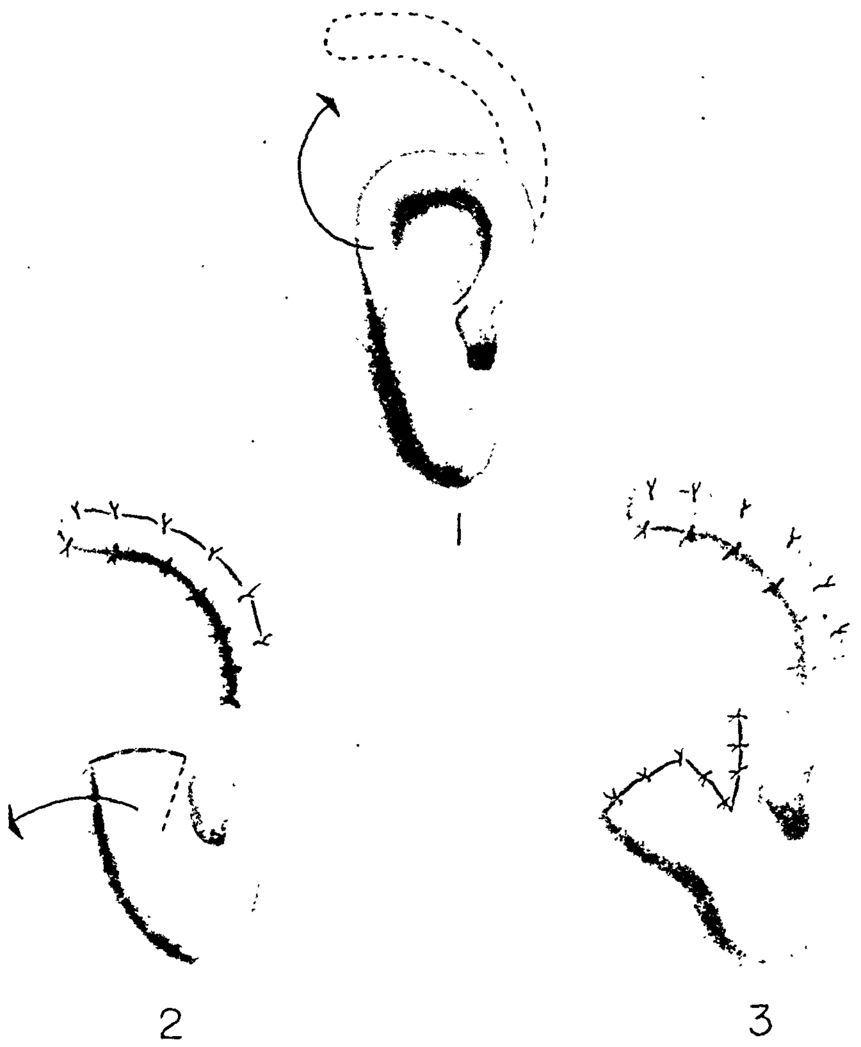
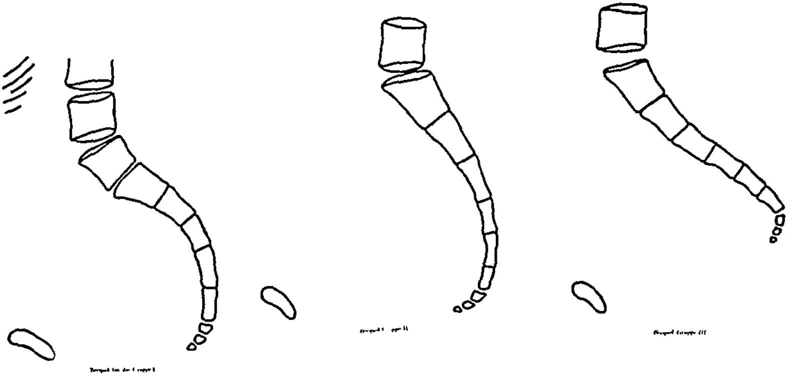


Fig. 4.—Drawing to show importance of using all available positions of auricle. When a small concha and helix are available, helix is detached and sutured at a higher level so that good relation is established with normal ear on opposite side. Small concha is widened by ever-useful Z plasty, and exposed edges of auricular cartilage are buried. Area of absent cartilaginous support is thus outlined by transplanted helix above and upper part of ear lobe below. Diced cartilage grafts or single segment of cartilage is later introduced to provide cartilaginous support. (*From Peer, L.A.: Transplantation of Tissues. Baltimore: The Williams & Wilkins Company, 1955, vol. 1, p. 130. Reproduced by courtesy of publishers.*)



Left, example of "long pelvis," Type 1. Fifth lumbar vertebra has expressively sacral tendency. Double promontory easily recognizable. Plane of superior straight is steep. Smallest diameter below promontory 1. External measurements within normal limits. *Center*, example of "long pelvis," Type 2. High promontory, steep pelvic inlet. Only one promontory, sacrum elongated and flattened, sacral concavity still existing. *Right*, example of "long pelvis," Type 3. Promontory is nearly straight above symphysis. Sacrum totally straightened, forming a "one-way street" without curves. Smallest diameter far below promontory. Disproportion in spite of long conjugata vera.

It is interesting that, at the same time, American authors (Caldwell and Moloy), studying the pelvis, also came to conclusions which to a great extent are in accordance with those aforedescribed. They distinguish four different types of pelvis. Their "anthropoid" type corresponds with the special pelvic type described by myself. They also stressed the length of the pelvis and the fact that the pelvic inlet appears, anteroposteriorly, more or less like an oval. They also pointed out the high frequency of complications *sub partu.*

I myself distinguish three different types of long pelvis, which differ in their obstetric importance.

Type 1 (see illustration, A).—Assimilation-transitional pelvis: Only the lumbosacral transitional vertebra with sacral character has functional importance: high promontory, double promontory, false conjugata vera I. The birth canal is elongated, the plane of the superior straight diameter is steep.

Type 2 (see illustration, B).—Assimilation pelvis with unchanged shape of sacrum (6 sacral vertebrae); assimilation vertebra belongs anatomically and functionally to the normally shaped sacrum. Only one promontory forms the narrowest diameter. There is certain flattening out of the sacral concavity. The pelvis is elongated with a steep pelvic inlet and a high promontory.

Type 3 A (see illustration, C).—Assimilation-canal pelvis with 6 sacral vertebrae; the most outstanding type of long pelvis. Additional elongation due to stretching of the sacrum, missing sacral concavity. Promontory remarkably high; very steep pelvic inlet. Length of conjugata vera I above average, "true" obstetric conjugata vera (conjugata vera II) situated between the first and second sacral vertebrae, often shortened.

Type 3 B.—Canal pelvis with 5 sacral vertebrae and with a probable but not proved assimilation: Canal shape o [illegible] vis cles are constructed the main difference in technic is in the type of material or tissue used for structural support of the auricle. In general, this consists of autogenous rib cartilage, preserved or fresh homogenous cartilage, preserved meniscus cartilage as a homograft, a composite structure of autogenous and homogenous cartilage and bone, or some sort of foreign body material such as the non-electrolyte metals or polyethylene. Our own experience during the past twenty-two years with the reconstruction of about 80 auricles has been limited to the use of the patient's own autogenous rib cartilage, and to preserved homogenous cartilage, either alone or in combination with autogenous cartilage.

We have constructed 65 auricles by using diced cartilage grafts pre-formed in a perforated vitallium ear mold. Autogenous cartilage has been used whenever it is present in sufficient quantity. In young children, however, and in some cases in which both auricles are absent, preserved bank diced cartilage has been used to supplement the patient's own cartilage.

Diced cartilage grafts[1] consist of small segments of cartilage that can be packed or molded into any desired contour, like wet grains of sand. The term "diced" is descriptive, but in practice the small segments are formed as flat shavings rather than cubes, because the former pack together without presenting sharp edges that might produce a prominence beneath the overlying skin.

Grafts of this type in a perforated vitallium mold (or any tolerated mold) will conform to the shape of the container.[2] When a perforated ear mold is filled with cartilage segments and buried beneath the patient's abdominal skin, connective tissue cells and blood vessels grow through the openings in the mold and fasten the separate segments together in the form of a solid plaque. If the mold remains in the recipient site for about five months, the cartilage segments will usually be fastened together by mature connective tissue cells with strong collagenous fibers, so that it can be removed from the mold as a solid ear structure. This cartilage framework

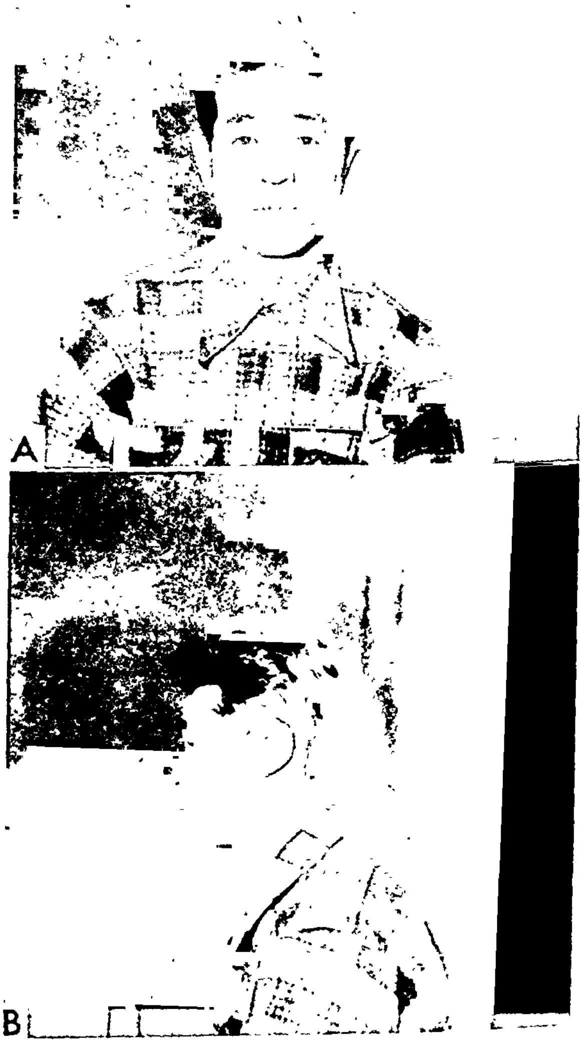


Fig. 6.—Patient with complete reconstruction of left auricle some years after final operation. This is typical of the average results obtained by vitallium ear mold method in author's first series. At conversational distance auricle is reasonably acceptable, but closer inspection shows a somewhat heavy structure with a hairless split skin—covered area above and behind ear.

Ophthalmologic Surgery

Hypotony Following an Intraocular Surgical Procedure

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HYPOTONY is a rather consistent occurrence after intraocular surgical operations, especially those performed for cataract or glaucoma. In most instances hypotony is not a cause for alarm, as normal intraocular pressure eventually is reestablished with no permanent visual loss. Complications do result in a small percentage of cases, especially when hypotony is accompanied by prolonged flattening of the anterior chamber. The hypotony resulting from loss of vitreous is not included in this article.

The frequency with which hypotony follows the extraction of cataract has been amply demonstrated by Hilding,[1] who observed it so regularly after the twelfth day that its occurrence is now considered the rule rather than the exception. I agree with Hilding[1] that this sequence of events is frequent, whether there is a flattened anterior chamber or not. The same holds true following operations for intraocular glaucoma. Postoperative checks of intraocular pressure show that hypotony frequently lasts for three or four weeks. In the absence of prolonged flattening of the anterior chamber, the intraocular pressure will return to normal limits without any permanent damage to the eye.

Hilding[1] postulated that the trauma, accompanied by edema or hemorrhage or both, that is incidental to the extraction of a cataract causes a disturbance of the electrical potentials between the stroma and the epithelium. As a result, there is interference with the production of aqueous, and the rate of outflow of aqueous is reduced, owing to general congestion. Bellows and his co-workers[2] suggested that a pronounced diminution of the flow of aqueous may be an important cause of prolonged flattening of the anterior chamber. They expressed the opinion that, because of the pressure gradient between the posterior and the anterior chamber, a transient lack of the aqueous causes the vitreous to be drawn firmly against the iris, thus obstructing the free passage of aqeuous from the posterior into the anterior chamber. As the aqueous is thus prevented from entering the anterior chamber, the pressure gradient increases. This places the hyaloid membrane and the vitreous still more firmly against the iris until complete obstruction occurs. With this pupillary block, the back pressure in the posterior segment interferes with uveal circulation, which in turn results in diminished aqueous formation.

I agree with Hilding[1] and Bellows[2] that diminished formation of aqueous is a cause of postoperative hypotony. In some instances, perhaps, both theories of postoperative hypotony are at least partially

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nous cartilage grafts in human tissues.

The selection of autogenous cartilage for the reconstruction of an auricle is much more important than the particular technic used by the surgeon. *Satisfactory external ears can be formed by methods other than the diced cartilage technic.* The experience of the surgeon and the use of autogenous cartilage are more important than the particular method employed.

Late Results.—In our hands the preformed diced cartilage framework has been satisfactory in about 80 per cent of 65 reconstructed auricles. The failures or unsatisfactory results were often due to poor management, and these, with few exceptions, occurred in the first 40 patients operated upon. Nine out of ten reconstructions completed in the past year have been satisfactory. In 1 patient the mold became infected owing to the presence of a broken-off piece of rubber drain inadvertently left in the transplantation site.

A critical evaluation of the successfully reconstructed auricles by the vitallium mold method demonstrated that patients and parents were generally pleased with the results. Children adjusted well in school and were accepted by their classmates as members of the group. Parents and older patients often desired to have more refined details made in the reconstructed ear, but none of our successfully treated patients were sorry that the ear had been made, in spite of the multiple operations and the hospital and medical expenses.

From the surgeon's standpoint, the reconstructed auricles in cases of unilateral involvement were generally satisfactory in contour, angle and lobe relation with the normal ear at conversational distances. Closer inspection always demonstrated a somewhat thick structure, with an absence of fine and accurate crura and concha outlines. Our bilateral reconstructions also were more satisfactory in the contour-

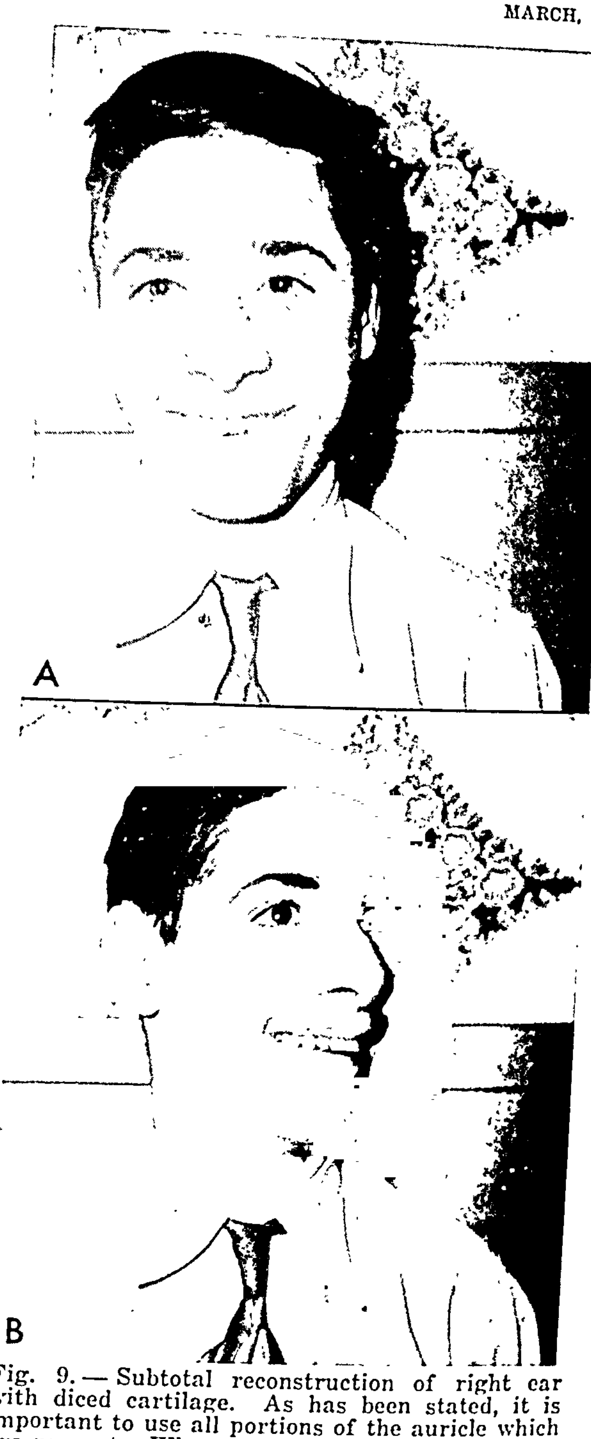

Fig. 9. — Subtotal reconstruction of right ear with diced cartilage. As has been stated, it is important to use all portions of the auricle which are present. When a small concha and helix are available, author detaches the helix and sutures it at a higher level, so that a good relation is established with the normal ear on the opposite side. The small concha is widened by the ever-useful Z plasty and the exposed edges of auricular cartilage buried. Thus the area of absent cartilaginous support is outlined by the transplanted helix above and the upper part of the ear lobe below. Diced cartilage graft or a single segment of cartilage is later introduced to provide cartilaginous support (Fig. 4).

chia forms very quickly and will always result in secondary glaucoma unless the condition is recognized and corrected. A small needle knife opening through the iris is sufficient.

The use of Diamox in flattened anterior chambers, as recommended by Agarwal and his associates[10] has not been effective, but I have not tried this method of treatment in many cases.

In cases of flattened anterior chambers, Armstrong[11] has recommended a few drops of plasma over the incision, and the addition of 1 or 2 drops of "Thrombin, Topical" solution (1,000 units per milliliter). The eye is left open for one to two minutes to allow the clot to become firm; the upper lid then is lifted gently over it and left undisturbed for twenty-four hours.

SUMMARY

Hypotony of several days' to several weeks' duration following an intraocular surgical procedure is a consistent occurrence. The hypotony, in most instances, will disappear spontaneously without permanent damage unless there are complicating factors, such as a flattened anterior chamber.

Apparently the sudden loss of intraocular pressure that occurs with the opening of an eyeball causes transudation of fluid, congestion and hemorrhages. This occurs because the intravascular pressure within the eye remains normal as the intraocular pressure drops to zero.

The diminution of aqueous formation is a major cause of postoperative hypotony and is due for the most part to the edema, congestion and hemorrhages that occur within the ciliary body and the iris. A major factor in prolonged flattening of the anterior chamber is probably the result of this diminution of aqueous formation. This applies especially when a demonstrable leak cannot be demonstrated or when no pupillary block is present.

RÉSUMÉ

Les opérations chirurgicales intra-ocularies sont fréquement suivies d'un état d'hypotonie de plusieurs jours à plusieurs semaines; celui-ci disparaîtra spontanément dans la plupart des cas sans laisser de lésion permanente, à moins de complications, tel—par exemple l'aplatissement de la chambre antérieure.

La baisse soudaine de la pression intraoculaire au moment de l'incision du globe oculaire, provoque apparemment une transsudation de liquide, ainsi que de la congestion et des hémorragies, dues au fait que la pression intravasculaire de l'oeil reste normale, alors que la pression intraoculaire tombe à O.

La diminution de la formation d'humeur aqueuse est une des principales cause d'hypotonie post-opératoire; elle est, en majeure partie, due à l'oedème, à la congestion et aux hémorragies se produisant à l'intérieur du corps ciliaire et de l'iris. Un des facteurs principaux de l'aplatissement prolongé de la chambre antérieure est probablement la conséquence de la diminution de la formation de liquide.

RIASSUNTO

Dopo gli interventi endooculari l'ipotonia è una eventualità pressochè costante per periodi di durata variabile. In molti casi scompare spontaneamente senza lasciare danni definitivi, a meno che non vi siano altre complicazioni come il collasso della camera anteriore.

La perdita improvvisa della pressione endooculare che sit verifica con l'apertura dell'occhio causa trasudamento di liquido, congestione ed emorragie. Questo avviene poichè la pressione intravasale rimane normale mentre quella intraoculare è caduta a zero.

Mais il est indéniable que les deux opérations sont justifiées puisqu'elles apportent au malade atteint soit d'une déformation du pavillon soit d'un bec-de-lièvre bilatéral, une amélioration aussi bien esthétique que psychologique.

On constate chez les chirurgiens plastiques expérimentés et critiques, une tendance au découragement devant les nombreux compromis nécessaires en cas de reconstruction totale d'une oreille. Ces spécialistes sont parfois enclins à renoncer à l'usage d'un cartilage autogène relativement sûr comme charpente de soutien, pour lui préférer une forme quelconque de matériel inorganique pouvant être moulé avec précision avant son implantation. Malheureusement ces corps étrangers implantés immédiatement sous la peau semblent provoquer plus de réactions antagonistes que les greffons similaires placés dans l'orbite ou implantés plus profondément en tant que substituts de segments de vaisseaux sanguins. La littérature ne mentionne pas de résultat satisfaisant à longue échéance concernant l'emploi de matières de soutien inorganiques pour la reconstruction de l'orreille.

Cela ne signifie pas que ces expériences doivent être abandonnées. Une connaissance plus précise des réactions antagonistes provoquées par les greffes de cartilage homogène et hétérogène, et des moyens propres à les prévenir, est nécessaire. Jusque là cependant, le spécialiste devrait continuer à employer une charpente autogène pour la reconstruction du pavillon, spécialement chez les enfants, qui ont une longue vie devant eux. Le cartilage homogène peut être utilisé chez les malades plus âgés quand il paraît contre-indiqué de prélever du cartilage costal, mais le cartilage hétérogène de boeuf ou de pastenague est encore du domaine de la chirurgie expérimentale. Lorsqu'on utilise du cartilage strié, un mélange de "débris" autogènes et homogènes peut actuellement être souhaitable, car l'absorption graduelle de cartilage homogène tend à amincir dans une certaine mesure la structure de l'oreille.

La possibilité d'éliminer les chondrocytes du cartilage et d'utiliser la matrice comme une sorte de matériel "d'homogreffe ou d'hétérogreffe idéale" sans réactions antigènes, est séduisante mais illusoire. Les tentatives en vue de synthétiser un greffon de matrice de cartilage ou d'injecter des substances amenant le greffon à former du cartilage n'ont pas été couronnées de succès.

Des collaborateurs de l'auteur poursuivent dans sa clinique des travaux afin de séparer les chondrocytes de la matrice, au moyen de techniques variées. Ces travaux peuvent éventuellement aboutir à un résultat. Une matrice de cartilage sans cellules, homogène et même hétérogène, pourrait donner un matériel de greffe utilisable, à condition que les cellules étrangères (plutôt que la matrice) soient les antigènes provoquant la production d'anticorps.

CONCLUSOES

A reconstrução do pavilhão auricular devia ser realizada com receio *mas não com excessivo cetimismo.* Os resultados pós-operatorios são, talvez, semelhantes aos obtidos pela reparação de uma fissura pre- alveolar bilateral no que tange a amplitude das narinas, a uma columela curta e uma aza nazal achatada.

A reconstrução auricular obviamente demonstra, em muitos casos deficiências nos relevos mais delicados mas quem negaria justificativa para operar uma criança com deformidade de orelha ou com una fissura bilateral do lábio, considerando o beneficio de sua re-integração social ou de sua rehabilitação?

Há uma tendência entre os cirurgiões plasticos experientes e críticos para desa-

index and middle fingers still tingled when struck. The nodule, which had been extremely tender prior to the operation, had "disappeared." Positional changes that caused cramping in the hand, noticed before the operation, had also disappeared. The tips of the thumb, index and middle fingers were still sensitive; there was an occasional "drawing" in the wrist, but the "burning" in the fingers had improved to a pronounced degree. The patient considered himself improved. On physical examination, the significant signs were hypesthesia over the proximal volar portions of the index and ring fingers and hypesthesia distal to this, with normal sensation over the thenar eminence, but hypesthesia over the midvolar surfaces of the phalanges of the thumb. The scar was well healed, nonadherent and just ulnarwards to the thenar crease, extending distally to the midpalm. Some increased weakness in the grip of the left hand was noted, and there was some dryness of the index and middle fingers. No abnormal masses were palpated.

A month after this consultation an ill-defined, pea-sized nodule was observed over the midportion of the scar, and this was judged to be induration about the scar. Pain and tenderness recurred along sensory branches of the median nerve, frequently during the day, and sensory loss in the tips of the thumb, index and middle fingers had become pronounced. A month later the small nodule had become considerably larger and was now present over the distal half of the surgical scar. It was 1½ inches (3.7 cm.) in diameter, not adherent, not moving with finger motions, not pulsating or fluctuating and not extremely tender except on extremely deep pressure. Roentgenograms revealed a large soft tissue mass with a trace of calcification.

On December 28 exploration revealed a moderately firm, brownish-red mass about 3 cm. in diameter, deep to the palmar fascia overlying the adductor of the thumb and the first lumbrical, and apparently incompletely encapsulated. A portion was subcutaneous, distal to the palmar fascia, volar to the first lumbrical tendon and the second metacarpal head. Pathologic examination revealed fibrosarcoma arising in the soft tissues of the hand and revealing many mitoses, anosocytosis, with variations in staining properties, and many areas showing abnormal, rounded nuclei.

On December 30 amputation was performed through the midpart of the left arm. Dissection of the specimen revealed that the neoplasm had not extended to within 1.5 cm. of the transverse carpal ligament and that the epitrochlear nodes were not involved. Up to the time of writing no metastasis has occurred.

Clinical Evidence.—About 5,000 years ago a mammary tumor was reported[1] as possibly due to trauma. Controversy has been voluminous since on the possible relation of trauma to new growth. Maude Slye[2] reported on the frequent occurrence of sarcomas at the sites of wounds in mice (later denied by Curtis[3]). The increased incidence of sarcoma occurring in "war injuries," in which considerable mechanical damage, infection, suppuration and splinters had exerted an effect over a long period, was conceded by Hellner,[4] who denied that single trauma could cause osteogenic sarcoma. Gillis and Lee[5] had described 24 cases of carcinoma arising in sinuses and scars in World War II wounds, whereas Melzner[6] reported on infrequent sarcoma following World War I wounds, and Hamant[7] reported likewise. Von Hansemann,[8] Gruber,[9] and Pick[10] noted no increase in tumor formation following these wounds. Stout[11] reported that in 36 of 66 cases of fibrosarcoma of the extremities the tumor developed in a scar.

Whereas Hellner[4] denied the possibility that a single trauma could cause giant bone cell tumor or osteogenic sarcoma, Inclan[12] reported in detail 3 cases of giant cell tumors of the knee following falls and knee injuries after several months, and Pack and Braund[13] described 3 cases of osteogenic sarcoma developing in traumatic hemothorax and hematoma of the thoracic wall.

Earlier reports (e.g., Lowenstein[14]) indicated that from 5 to 16 per cent of patients with sarcoma had a history of single trauma, but the evaluation of the history was usually inadequate. To add to the difficulties in evaluating this problem, after Meyerding[15] noted a relation between trauma and the development of fibrosar-

Questo non significa che esperienze su questa linea debbano essere abbandonate; una conoscenza pià approfondita sulle cause dell'eliminazione di questi trapianti cartilaginei omologhi ed eterologhi e sui mezzi per evitarla potrà essere applicata anche ai trapianti inorganici.

Ma fino a che non arriverà questo momento il chirurgo plastico dovrà continuare a usare come mezzi di sostegno dei tessuti autologhi per ricostruire le orecchie specialmente nei bambini. Le cartilagini omologhe potranno essere usate nei pazienti più anziani in cui non è consigliabile asportare cartilagini costali, mentre quelle eterologhe rimangono ancora nel domino della chirurgia sperimentale. Quando si usino blocchetti di cartilagine è consigliabile usare una mescolanza di frammenti autologhi ed omologhi, poichè il graduale riassorbimento di questi ultimi tende a ridurre lo spessore dell'orecchio.

La possibilità di isolare i condrociti dalla cartilagine e di usare la matrice come una specie di trapianto ideale sprovvisto di potere antigene è un'ipotesi interessante ma non realizzabile. Del pari non è stato possibile sintetizzare una matrice di cartilagine o iniettare sostanze capaci di stimolare la produzione di tessuto cartilagineo da parte dei tessuti ospitanti.

Ricerche sono in corso per tentare di separare i condrociti dalla matrice con vari metodi, e forse ciò potrà essere possibile. Matrici di cartilagine emologa ed eterologa, senza cellule, possono rappresentare un utile materiale da innesto poichè proprio le cellule (più della matrice) rappresentano gli antigeni capaci di provocare la formazione di anticorpi.

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One of the most important features of a good teacher is that the students should have free and ready access to him. In too many departments, particularly where the senior staff are much occupied with research or administration, they appear to the students as remote Olympians, momentarily descending from the heights to deliver a lecture or to administer an examination. To take one's difficulties to such a preceptor would savour of impropriety.

—*Sinclair*

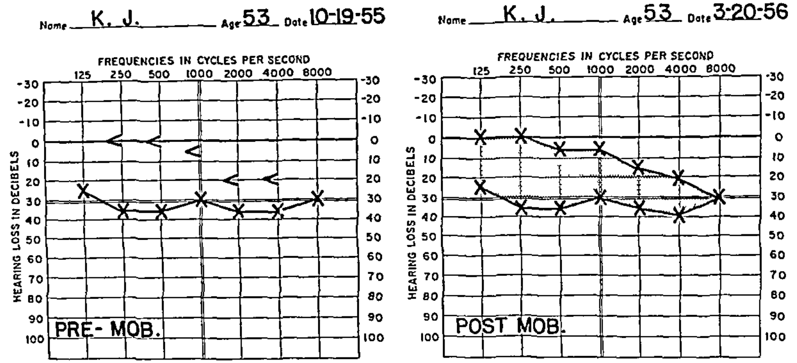

Fig. 3.—*A*, mobilization of stapes of left ear, Oct. 20, 1955. *B*, most recent audiogram, showing magnitude of sustained improvement.

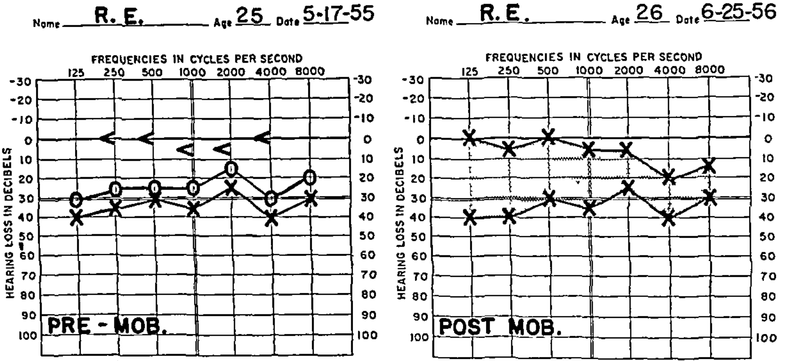

Fig. 4.—*A*, mobilization of stapes of left ear, April 18, 1955. *B*, most recent audiogram, showing magnitude of sustained improvement.

except a protective antibiotic, is prescribed.

Anesthesia is obtained by undermining the cutaneous external auditory canal with 0.2 to 0.4 cc. of 4:1 combination of 2 per cent zylocaine and 1:1,000 epinephrine introduced with a 0.5 cc. tuberculin syringe and a 26-gauge short beveled hypodermic needle. One injection is made at the posteroinferior junction of the cartilaginous and osseous portions of the external auditory canal, in the tympanomastoid suture. Thus the entire posterior and inferoanterior canal wall and the adjacent portions of the tympanic membrane are completely anesthetized.

A peritympanic incision is made in the *posterosuperior canal wall*, extending from the 11 o'clock position to the 8 o'clock position in the right ear and from the 1

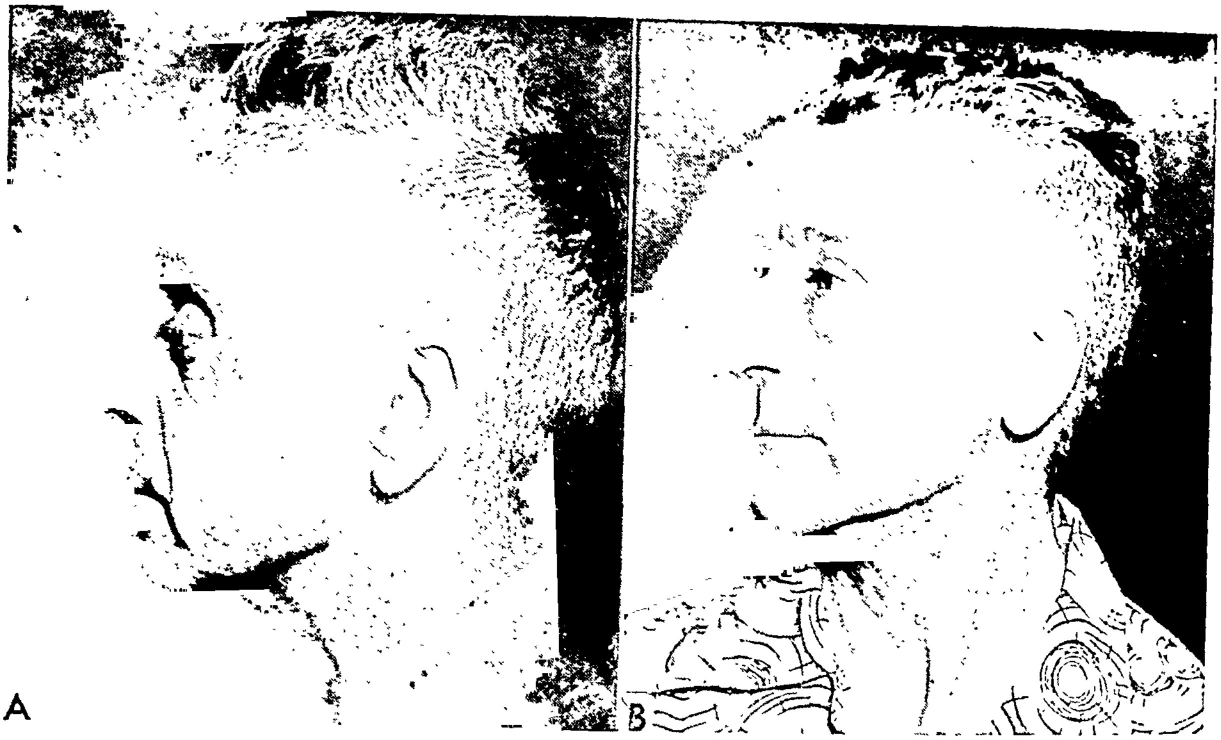

Fig. 1.—Infraorbital ridge restored by cancellous bone graft from ilium, raising infraorbital ridge and restoring orbit.

can be tightened when necessary or advisable. Disadvantages of the method are that the closed bite may interfere with drainage, mastication and oral hygiene; the anchoring teeth may tend to loosen from the traction of the wires, and foreign bodies next to the gums may cause gingivitis. On the other hand, in the event of emergency, the wires can be quickly cut and the mouth opened. The use of wires for immobilization of the jaws, with the existing teeth serving as anchorage, was first reported by Gilmer[1] in 1887.

Circumferential wiring is a technic particularly applicable when the teeth are either absent, too few or too insecure to afford attachment for the wires, or when the angle of the fracture is such that circumferential wiring will hold the proximal and distal fragments together. With this method the wires are wound around the body of the bone and twisted over a splint fitted to the lower alveolar ridge, (Black[2]). After reduction of the fracture an impression is taken, and from this a cast is made of vulcanite, acrylic plastic or metal to fit over the alveolar ridge beyond the fracture on either side.

Buccal arch bars, introduced by Gilmer[3] and Sauer[4] and modified by Winter[5], are used for patients with an incomplete complement of teeth, or when the teeth are carious or so arranged as to make it difficult to hold the fracture in alignment. Arch bars are also employed when teeth are present in both fragments of the mandible and the maxilla is edentulous.

The arch bar is bent to conform to the shape of the dental arch after the fracture has been reduced and is then fastened to the teeth with fine-gauge wire, either to the maxilla or the mandible, or both, depending upon the situation at hand.

Cast splints have furnished excellent results, particularly when only a few teeth remain in the fragment. These splints, first described by Hullihen,[6] often provide necessary immobilization when attached

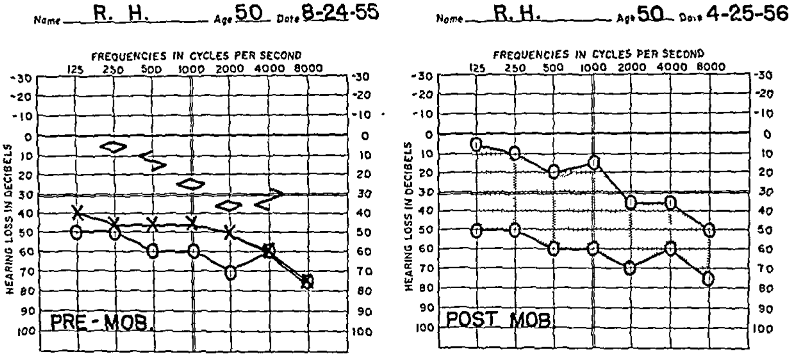

Fig. 9—*A*, mobilization of stapes of right ear, Aug. 25, 1955. *B*, most recent audiogram, showing magnitude of sustained improvement.

quence if ordinary technical caution is exercised. In the event of a perforation, a tissue paper diaphragm or a compressed gelatin pledget may be placed over the defect to seal the middle ear during the healing process.

It is possible that otitis media, with its varied complications, may result from mobilization of the stapes unless adequate antibiotic prophylaxis is prescribed. Despite this protective consideration, excessive surgical trauma may invite resistant infection, as it may after any surgical procedure.

On rare occasions the peritympanic incision may be the source of postoperative bleeding, but this is effectively controlled by firmly inserting a cotton pledget in the external auditory meatus to seal off the canal. Meddling with this annoyance is likely to result in contamination and an active infection.[8]

Results.—Four hundred stapes mobilizations were done in the eighteen months between October 1954 and April 1956. The results for the preoperative category one are shown in Table 1. The total number of ears treated in this group was 210. Hearing improved to the level of 30 db. or more in 94 ears (44.7 per cent). Subsequent regressions, most of them occurring within four weeks after the operation, were noted in 14 ears, leaving a net successful result for 80 ears or 38.1 per cent. Hearing in 63 instances (30 per cent) improved 15 db. or more but did not reach the 30 db. level. Eventual regressions withdrew 16 initial improvements; thus, 47 (22.4 per cent) sustained an improvement of 15 db. or more for six to eighteen months. Hence, total improvement was obtained in 127 (60.5 per cent); total regression in 30 (14.3 per cent), and no improvement in 53 (25.2 per cent).

In preoperative category 2 there were 171 operations (Table 2). Sixty of these, or 35.1 per cent, improved hearing to the 30 db. thresholds or better, but subsequent regressions subtracted 11 within four months after the operation, so that at the time of writing there are 49, or 28.7 per cent, with hearing improvement sustained for six to eighteen months. In 53 (31.0 per cent) appreciable improvement was achieved but did not reach the 30 db. level ne of the mandible will admit screw fix-ion. Before any attempt is made to sert the pins, careful roentgenographic udies should be made on the plates to dicate the exact location of the fracture ne and the amount of displacement. The ns should be inserted under sterile condi-ons and the use of high speed drills voided because of the heat they generate. The depth of insertion of the pin should e predetermined by marking the proper vel with a small piece of rubber tubing. t least two pins should be placed in each agment, both located at a minimum dist-nce of 1 cm. from the fracture line. The vo pins are joined by a connecting device, ne bone fragments manipulated into posi-on, and the universal joint and secondary ars applied and securely locked in place.

Many methods employing external fixa-ion are based upon the Roger Anderson[7] in unit principle introduced by Converse.[8] n my own experience, complications with his method have been rare. Those which id occur were loosening of the pin and nild local cellulitis, each of which cleared pontaneously on removal of the pins.

Internal pin fixation with the Kirschner ype wire was introduced by Brown.[9] The vire is placed directly across the fracture ine and holds the two fragments in posi-ion.

Reduction and Fixation.—In the treat-nent of fractures of the jaws, routine neasures of preoperative and postopera-ive care, with a few exceptions, are gener-lly similar to those for injuries elsewhere n the body. For these procedures, either lock, infiltration or endotracheal anes-hesia is satisfactory; I employ them all for their separate indications. Only light preoperative medication is administered, lest the patient's respiratory efforts be hampered.

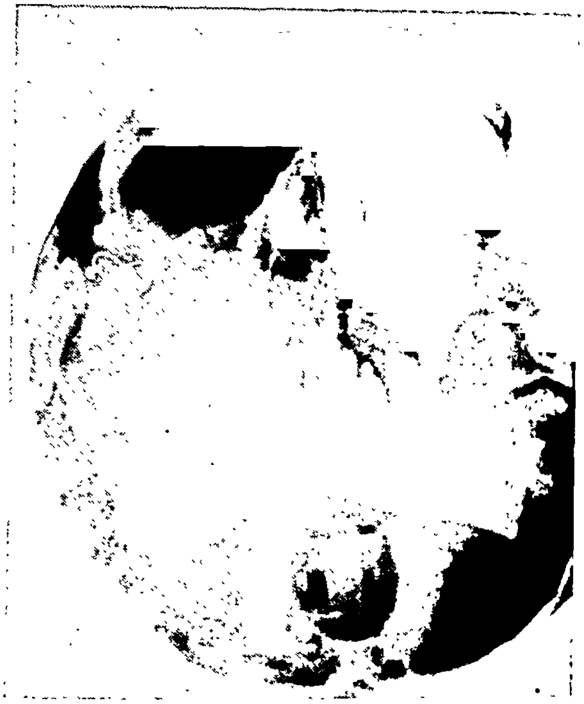

Fig. 4.—Compound comminuted fracture of zygomaticus with displacement downward and backward. Also compound comminuted fracture of zygoma. Antrum packed through Caldwell-Luc incision for splinting.

Fractures of the Upper Jaw: Reduction and fixation of fractures of the superior maxilla are based upon the available points of fixation peculiar to the specific fracture, rather than upon the level at which the fracture occurs. Union occurs rapidly in impacted fractures of the maxilla, and for this reason reduction must be effected at an early stage. Complete reduction of the floater types may be performed by intermaxillary elastic traction, or by intermaxillary wiring, without anesthesia. For many patients, adequate fixation is obtained by fixing the upper jaw to the lower, and only for the extremely mobile fracture is external fixation required. When the fracture is seen late it may be necessary to camouflage the deformity by means of a reconstructive operation (Fig. 1).

Fracture of the Aveolar Process: Fractures of the alveolus quite frequently result from tooth extraction. The teeth sometimes accompany the fragment, or they may remain in the main body of the bone. They may be undamaged, or their crowns

It does not change the structure of the ear and involves a minimum of mental and physical inconvenience.

ZUSAMMENFASSUNG UND SCHLUSSFOLGERUNGEN

Die Ergebnisse von 400 Mobilisierungsoperationen des Steigbügels werden auf Grund der erzielten Verbesserung des Hörvermögens in drei postoperativen Kategorien nachgeprüft. Der Grad des Erfolges hängt offensichtlich vom Umfang der natürlichen Funktion ab, die durch die Schwellenwerte der Knochenleitung für die reine Tongehörmessung und durch eine kochleare Reserve, die einen Unterschied zwischen Luft-und Knochenleitung von mindestens 25 bis 30 Dezibels aufweist, ausgedrückt wird.

Bei 32 Prozent der 400 operierten Patienten war die Verbesserung des Hörvermögens bemerkenswert, bei 22 Prozent von gewissem Nutzen. In 62 Fällen (15,5 Prozent) liess die Hörkraft nach anfänglicher Besserung wieder nach. Viele von diesen wurden nachoperiert und konnten ihre Hörfähigkeit für wachsende Zeiträume erhalten. An einigen Kranken wurde eine Fensterungsoperation ausgeführt, andere zogen es vor, einen Hörapparat zu tragen. Die Erfolge in diesen Fällen bleiben in der vorliegenden Arbeit unberücksichtigt und werden in einer weiteren Untersuchung nachgeprüft werden.

In der Gruppe von 122 Versagern zeigten zehn Kranke einen weiteren Gehörverlust von 10 bis 15 Dezibels; sonst traten keine nachteiligen Erscheinungen auf, die die Fähigkeit des Kranken, den Hörapparat mit wenigstens der gleichen Wirksamkeit wie vor der Operation zu benützen, beeinträchtigt hätten.

Die Mobilisierung des Steigbügels stellt ein verhältnismässig unkompliziertes Verfahren zur Besserung des Hörvermögens bei einer bemerkenswerten Anzahl von Kranken dar, bei denen die Hörschädigung mit der klinischen Diagnose einer Otosklerose in Einklang steht.

Die Methode führt zu keiner Veränderung des Baues des Ohres und lässt sich mit einem Mindestmass von seelischer und körperlicher Beanspruchung des Kranken ausführen.

RESUMEN Y CONCLUSIONES

Se analizan los resultados de 400 operaciones de movilización del estribo de acuerdo con el grado de mejoramiento en la audición obtenido en tres categorías postoperatorias. Es evidente que el grado de éxito depende de una buena función natural como lo indican los umbrales de conducción ósea para la audiometría de tonos puros y la reserva coclear representada por una diferencia de conducción ósteo aérea por lo menos de 25 a 30 decibeles.

Treinta y dos por ciento de los 400 pacientes operados mostraron mejoría marcada y 22 por ciento lograron alguna mejoría en la audición. Además, hubo 62 pacientes (15.5 por ciento) cuyo poder auditivo dismimuyó después de una mejoría inicial. Muchos de esos casos han sido reoperados con mejoría satisfactoria y duradera en la audición. Algunos se han sometido a fenestración y otros han preferido usar aparato auditivo auxiliar. Los resultados se han omitido en este reporte y serán objeto de otro estudio.

En el grupo de 122 fracasos, 10 pacientes mostraron una disminución de 10 a 15 decibeles; por otra parte, no hubo efectos adversos que impidieran a los pacientes usar un aparato auditivo auxiliar por lo menos tan efectivamente como antes de la operación.

La movilización del estribo proporciona un método relativamente sencillo de mejorar la audición en un número apreciable de pacientes cuyo defecto conducía al diagnóstico clínico de otosclerosis.

Fig. 6.—Buccal arch bars applied to teeth for fixation of fracture with unstable teeth.

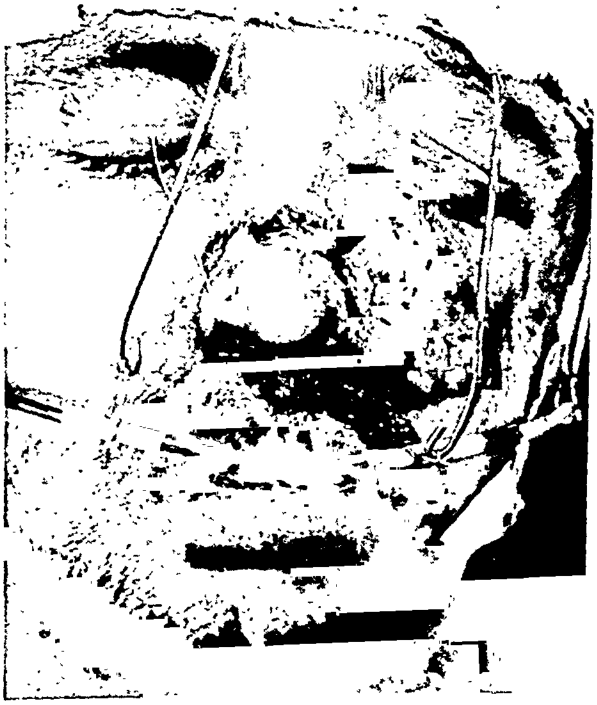

Fig. 7.—Edentulous upper jaw. Kingsley splint used for fixation.

strate the fracture line. Multiple loop elastic traction will hold the fragment in normal anterior-posterior position and occlusion (Fig. 3). Upward pressure will be required to maintain the fragments in apposition. This may be accomplished by using a modified Barton's bandage, with a few elastic bands stretched over the bandage in front of the ear, the elastic bands being supported by safety pins. Such fractures heal rapidly, and fibrous union is accomplished within fourteen to twenty-one days.

Lateral, downward and backward displacement is more serious, involving the nasal and zygomatic bones. The line of fracture here extends through the root of the nose, through the floor of the orbits, and down and back through the pterygoid processes and the sphenoid bones. Reduction is accomplished by bringing the upper and lower teeth into occlusion. Elastic traction applied to the teeth by means of a buccal arch bar or multiple loop intermaxillary traction will bring the fragments into place in a reasonably short time, with little discomfort to the patient. Gravity is counteracted after occlusion with a modified Barton's bandage placed as previously described. If there are lacerations of the soft tissue, or teeth are lacking in either the upper or the lower jaw, a Kingsley splint may be used for the upward pressure necessary to offset the pull of gravity on the soft tissues. Fixation for fourteen to twenty-one days will usually result in fibrous union, bony union may result only after a long period.

Fracture of the maxillary bones may vary from an injury to the alveolar process to a tearing loose of all of the facial bones by a transverse fracture at or near their attachment to the cranium. These maxillary fractures, because they are contiguous with the cranium are often associated with extensive brain injury and fractures of the brain case. Transverse fractures are compound. They may occur through the middle portion of the nasal bones, extend through the frontal processes of the maxilla, and produce backward displacement of the maxilla and nasal bones in the lower portion. In the presence of such a fracture, when complete,

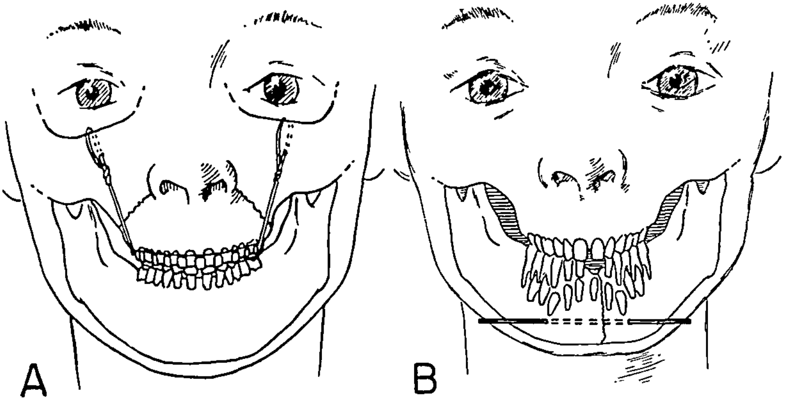

Fig. 1.—*A*, extra-oral use of orbital rims for stabilization of maxillary fractures. *B*, extra-orbital pin fixation (Kirschner wire technic). This also can be used, care being taken to avoid permanent tooth follicles.

1. Any gross abnormalities in the general contour of the face should be investigated, with a minimum of handling.
2. Light palpation will disclose any sensitive area and any irregularities of the mandible, maxillae, zygomatic arches or zygomas.
3. A careful evaluation should be made of the occlusal status and of any displacement or mobility of the jaws.
4. The presence of submucosal hemorrhagic areas should be kept in mind, since this is usually indicative of underlying damage to the bone, particularly on the lingual aspect.

Roentgenograms.—The taking of roentgenograms, accurately positioned and properly exposed, is the most important of the diagnostic procedures in the young patient.

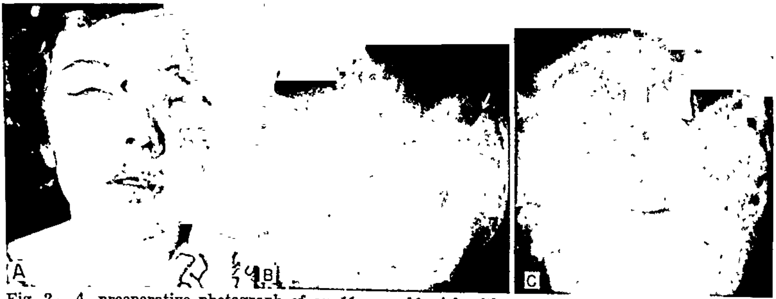

Fig. 2.—*A*, preoperative photograph of an 11-year-old girl with a severe left zygomatic fracture. *B*, preoperative Waters view of facial bones reveals posterior and lateral displacement of left zygoma. Also visualized are multiple fractures of nasal bones. *C*, postoperative Waters view revealing 32-gauge stainless steel wires immobilizing left zygoma in its normal anatomic relation. Wiring was also necessary for the nasal fractures.

through the temporal fascia. The space between the temporal fascia and temporal muscle leads directly under the zygomatic arch to the medial surface of the bone. A long, flat elevator is inserted, and by means of leverage, with the instrument resting on the posterior margin of the scalp incision and the skull, the zygomatic bone is elevated into its original position.

Compound Comminuted Fracture of the Zygomaticus: With this type of fracture the maxillary sinus must be evacuated of bone splinters, and support must be provided. Associated soft tissue injuries are always present, and immediate treatment requires removal of all foreign bodies, débris and devitalized hard and soft tissues. The sinus is opened through a Caldwell-Luc incision and explored and the bony spicules and hematoma removed. The displaced fragments are then manipulated into position. After the maxillary sinus has been evacuated and the fragments are in position, support is necessary to hold them in place. If it is desired to close the oral opening into the sinus, the packing may be brought out through an opening under the inferior turbinate of the affected side (Fig. 5). I prefer to bring the pack out through the oral opening. The cavity of the sinus is packed in slight overcorrection with iodoform gauze, most of the iodoform having been washed out in physiologic solution of sodium chloride. The packing is left for approximately ten days, after which it is removed from the sinus.

Unilateral Fracture: Unilateral fractures in which displacement is minimal can usually be reduced manually and immobilization produced by intermaxillary wiring or by the placement of buccal arch bars plus intermaxillary wiring. Immobil-

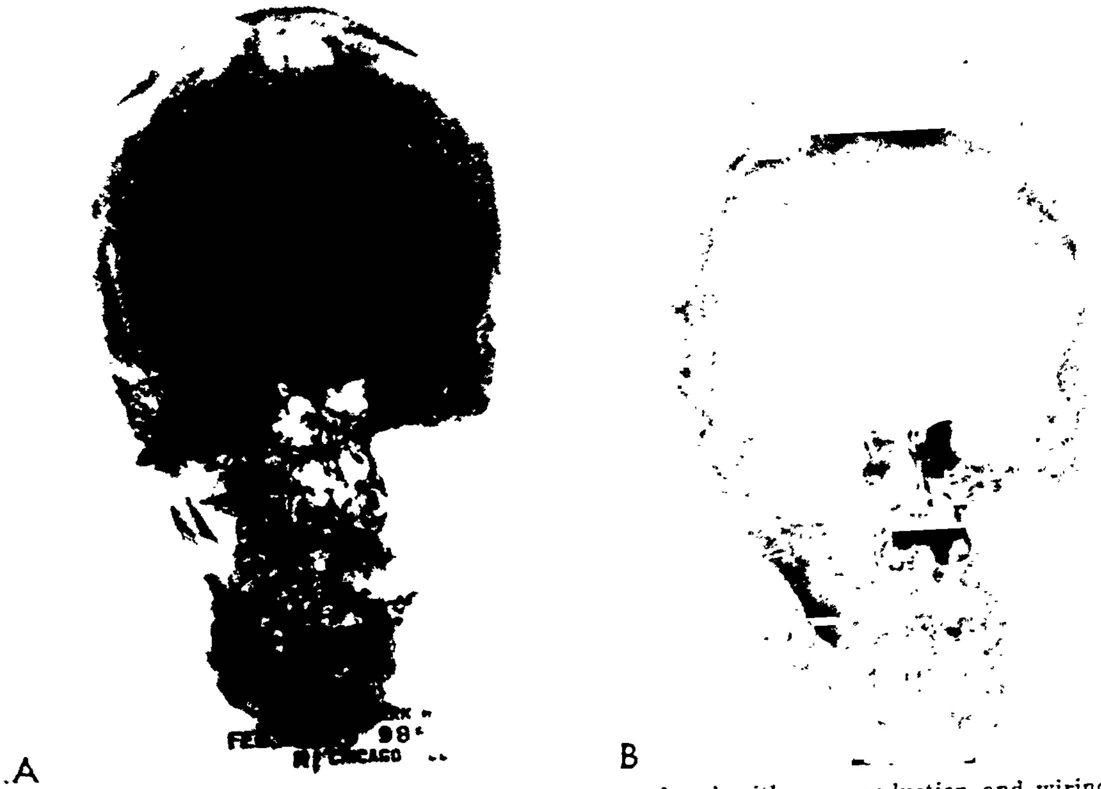

Fig. 9.—*A*, fracture of condyle. *B*, fracture reduced with open reduction and wiring.

maxilla can be further incorporated for immobilization of a complete fracture of the midportion of the face.

3. It may be difficult to secure anchorage for an arch bar or eyelet loop wiring in a child 7 years of age or younger, and an acrylic splint over the upper teeth may then be utilized to good advantage. The splints are made by taking colloid impressions of the upper and lower teeth and the associated related structures. This may necessitate anesthetizing the child for a short time. After this the acrylic splints can be made from the models poured from the original impressions. When the splint has been properly seated in the mouth, wires of stainless steel are inserted through the soft tissues overlying the maxillae, connecting the splint to a light plaster head cast.

4. Some inconvenience and difficulty may be encountered in maintaining a traction head cast on a child with maxillary fractures. A procedure that eliminates the use of a head cast has been described by Adams, who suggested the drilling of small holes in the infraorbital rims. Through these, stainless steel wires are threaded and looped around each of the rims, after which they are attached to the maxillae in order to maintain them in their normal anatomic position.[3] This works very satisfactorily when only the maxillae are fractured (Fig. 1 *A*).

Zygomatic Fractures: The majority of zygomatic and zygomatic arch fractures can be easily handled by either of two means. 1. The Gillies approach, utilizing a periosteal elevator which is inserted through an incision in the temporal area. The periosteal elevator follows the path of the temporal muscle under the zygomatic arch, and any malalignment or depressed fracture, if one exists in the zygomatic process of the temporal bone or the

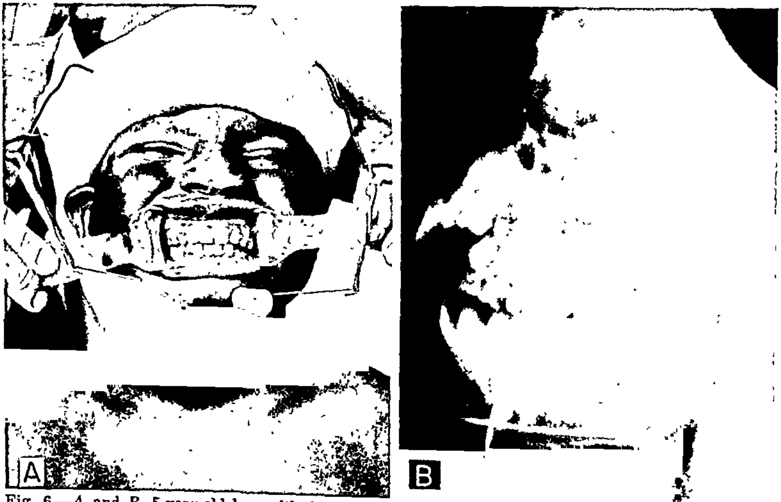

Fig. 6.—*A* and *B*, 5-year-old boy with fracture of mandible in region of symphysis and right body. Immobilization was obtained by careful insertion of Kirschner wires as shown in *B*.

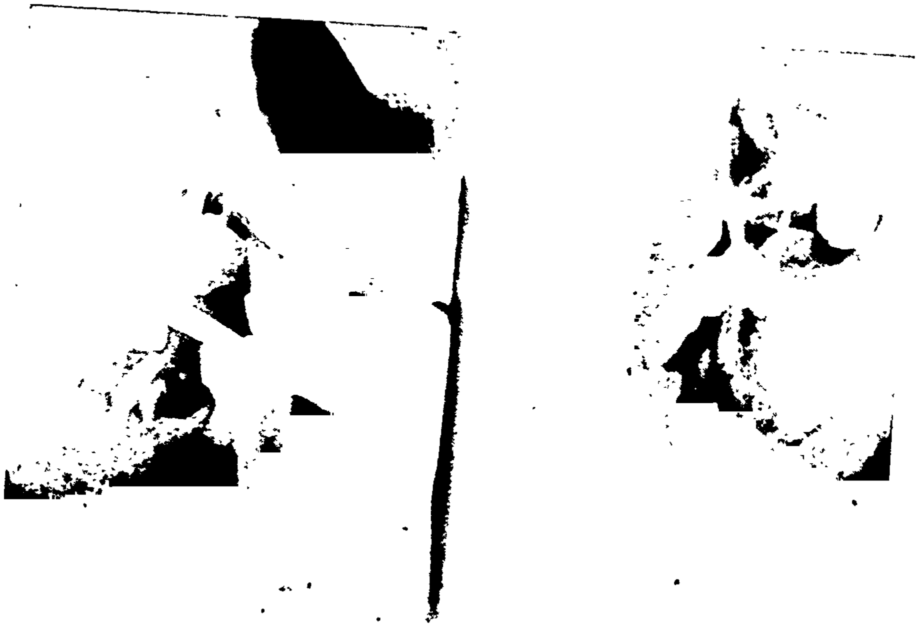

Fig. 12.—Roentgenogram of Hullihen splint applied with prong to proximal fragment of fracture of mandible.

the face an upper vulcanite plate is made and wired to the upper jaw, and treatment then proceeds as though a full complement of teeth were present (Fig. 7).

For backward and upward displacement with considerable impaction, overhead traction attached to the maxilla may be necessary for reduction. Weight traction, when required, is accomplished by threading a wire through the alveolus and attaching this to a cord passing over two pulleys of a balkan frame. The direction of pull can be altered by sliding the pulley along the beam of the frame. This will permit the patient to sit up or lie down, as may be necessary for comfort and rest. If the fracture is mobile, 1 to 2 pounds of weight will be necessary; late fractures will require up to 6 pounds, depending upon the degree of consolidation prior to traction.

Fractures of the Mandible.— As with maxillary fractures prior to reduction, all infected teeth require extraction, and even those in the line of fracture are pathways for the spread of infection. Nevertheless, teeth in the fracture line are sometimes maintained temporarily, when it seems probable that they may be valuable in reduction, and extracted later. Particularly with fracture through the molar region and angle, teeth may be indispensable in holding down the posterior fragment (Fig. 8, *A* and *B*). It is important also that salvageable teeth be retained for use in potential fixation. Close observation is essential, however, so that any tooth that produces an acute flare-up of infection may be immediately removed.

In fractures behind the last molar tooth, the main fragment is placed in normal occlusion and splinted to the maxilla, and the posterior fragment is immobilized as indicated by the direction and position of the fracture. If teeth are absent in the maxilla, the upper denture may be used to fix the lower jaw to the upper.

Comminuted fractures are cared for by immobilization of the main fragments in occlusion, the small fragments being permitted to align themselves in proper no further "packing" is used. The patient is allowed to get up when he feels ready, usually on the second to the fourth postoperative day. If continuous bed rest has been ordered this does not apply. The ordinary postoperative measures are used; drawing the finger through the anus every day or two to prevent pocketing or bridging is worth mention.

To epitomize the foregoing comments: Surgical measures are still required in most cases of tuberculous fistula-in-ano. Of first importance is the activity and extent of the pulmonary disease, of which the fistula is merely a complication. The time of operation, except for incision of a perianal abscess, is determined by the activity of the pulmonary disease. In performing a fistulectomy, the standard procedures are used.

CRITERIA FOR DIAGNOSIS

Disagreement exists as to criteria for diagnosis. My experience indicates that the results of histopathologic examination supply the *only* criterion of importance.

It is well known and, in my opinion, a generally accepted fact that a clinical diagnosis founded only on the gross pathologic picture is absolutely undependable, even though the opinion is that of one thoroughly conversant with the lesion. *Not so well known and not so widely accepted* are the real value of histopathologic examination of suspected tissue and the limited reliability of guinea pig inoculation with preparations of tissue excised from the fistulous tract or the wall of the abscess cavity.

The advocates of guinea pig inoculation as the most valuable means of diagnosing tuberculosis in cases of perianal inflammatory and suppurative disease, particularly abscess and fistula, in most instances accept their observations at face value. The fact is there is a large element of error here that is either unknown or overlooked.

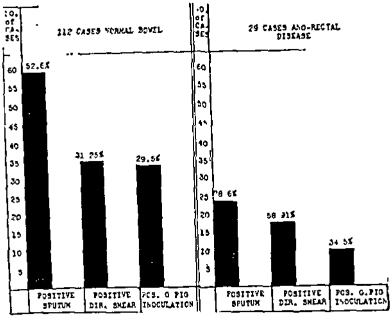

Fig. 2.—Charted observations in 141 of the 200 cases examined.

In a study of 200 patients with pulmonary tuberculosis, reported from this service (Fig. 2), it was determined that not only viable but virulent tubercle bacilli were present in the lower portion of the sigmoid and in the rectum in more than 30 per cent. Of patients with anorectal abscess or fistula, 34 per cent had such bacilli present in the last foot of the bowel within an hour after an enema.

In a third of the cases, therefore, tubercle bacilli may enter the rectal or anal orifice (the internal opening) of the fistulous tract. Accordingly, whether the fistula is a tuberculous process or not, tubercle bacilli may be present in it in a third of the cases. At the time the report was published, this large margin of possible error had not been considered in any article on the subject in the current literature. One reason for this is that so little work had been done to determine the incidence of viable tubercle bacilli in the terminal portion of the bowel.

It is absolutely impossible to wash or treat tissue excised or curetted from these fistulous tracts in any way known to bacteriologists, so that contamination of tisplacement, and only rarely are forward and outward displacement encountered. Reduction and fixation of this fracture causes little concern as to the final action, except in children, in whom bone growth is involved, and because the head in the joint cavity is not essential to efficient mastication. Loss of function of the external pterygoid is compensated by the other muscles of mastication. According to Zemsky,[14] difficulty encountered in open reduction does not warrant opening of the joint. Union, if it does occur, is unimportant, because treatment is directed toward muscle compensation, and whether fibrous or bony, is of slight concern (Fig. 9*A* and *B*).

Treatment is directed toward normal occlusion, with fixation by intermaxillary wiring maintained for three to five weeks. Motion is usually started at the end of five or six days, and complete removal of the fixation is done at four weeks. Displacement of the condyle affects function but little, if at all.

In bilateral condylar fractures a typical displacement occurs in the main body. The last molar teeth act as a fulcrum, producing an open bite anteriorly. Union in this position presents a serious problem. Compounding in the neck of the condyle is rare, so one may anticipate early and rapid union. Reduction should be done early, and continuous observation is necessary to anticipate any displacement that may occur. The displacement, when present, is usually lateral. As soon as normal occlusion is effected, the traction is reduced to maintenance and close observation. When motion is allowed, which is usually at the end of seven to ten days, centric occlusion must be insisted upon without compromise.

If the fracture is seen after fourteen to twenty-one days, bite blocks, as suggested by Ivy and Curtis,[15] may be used in the molar region. For pulling the lower incisor region forward and upward, anesthesia may be necessary. If the fracture is seen after twenty-eight days, mechanical reduction is seldom if ever possible. Extraction of posterior molars may relieve the condition, but excision of the condylar heads must be considered.

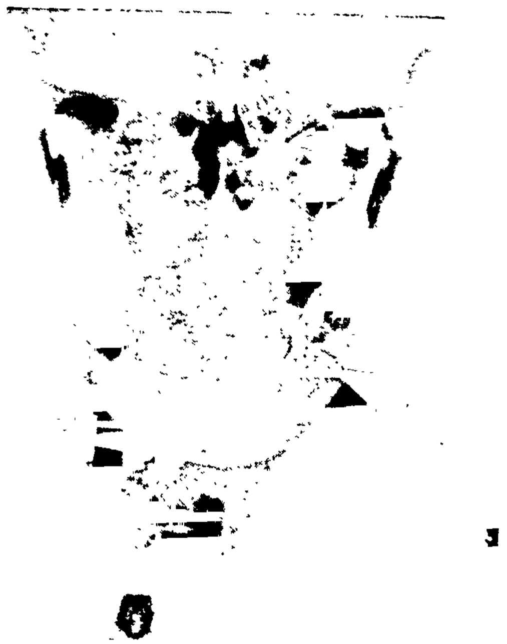

Fig. 14.—Roger Anderson external pin fixation, used to control fracture of an edentulous mandible.

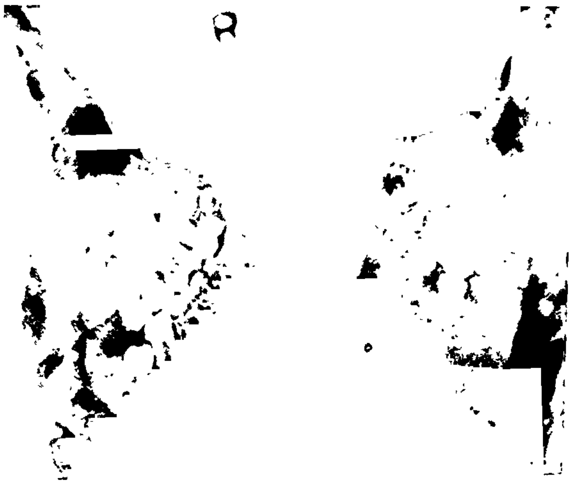

Fig. 15.—Molar tooth in molar region resisting displacement of posterior fragment.

Injury to the temporomandibular joint from the use of forceps at birth may result in a crushing injury to one or both con-nelle *sezioni* in serie è positivo nel 75%.

E' sufficiente colorare una sezione ogni tre o anche una ogni 10. Se l'animale o le colture sono positive e lo sputo è negativo questi casi devono essere uniti a quelli stabiliti con gli esami istopatologici. In assenza di questi criteri la lesione deve essere considerata come non tubercolare o almeno lasciata in dubbio fino a che non venga provato il contrario.

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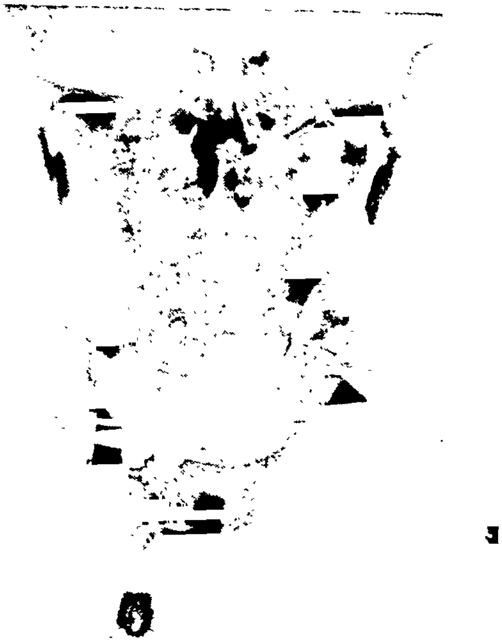

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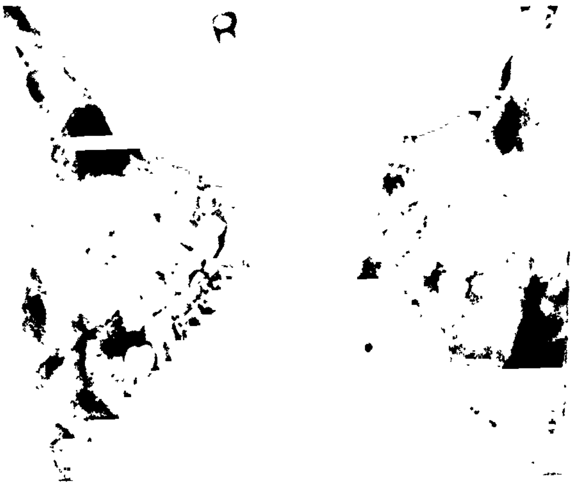

Fig. 15.—Molar tooth in molar region resisting displacement of posterior fragment.

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Injury to the temporomandibular joint from the use of forceps at birth may result in a crushing injury to one or both con-

SUMMARY AND CONCLUSIONS

Five cases are reported of extensive cicatricial stenosis of the esophagus, treated during the past two years by retrosternal transposition of an isolated colonic loop. In 4 cases the right half of the colon and the terminal portion of the ileum were transplanted; in 1 case, the transverse portion of the colon, together with the splenic flexure. Reestablishment of the continuity of the intestinal tract was effected in 4 cases by an ileotransverse anastomosis and in 1 case by a colocolonic anastomosis of the ascending with the sigmoid portion of the colon. One end of the isolated loop of colon was implanted into the stomach (in 4 cases in conformity with peristalsis and in 1 case contrary to it). The other end was brought up to the left cervical region, where in 4 instances an ileostomy was performed and in 1 a colostomy of the descending portion of the colon. Ileostomy or colostomy was used to feed the patient, a rubber tube being introduced into the stomach during the stages of reconstruction. At a second stage an end-to-side anastomosis of the transected cervical portion of the esophagus with the ileum or the colon was carried out, and at a third stage the ileostomy was closed. All patients were discharged with satisfactory functional results and with notable gains in weight. Retrosternal transposition through the anterior portion of the mediastinum presents many advantages, such as the absence of pleural complications and the fact that it requires a lesser length of mobilized colon than does subcutaneous transposition. Replacement of the esophagus by the right half of the colon is regarded as the method of choice, because of the isoperistaltic transposition. Anomalies of the right colic artery may eventually preclude utilization of the right half of the colon, however, in which case the transverse or the left portion should be transplanted in preference to the small intestine.

RIASSUNTO E CONCLUSIONI

Vengono riferiti 5 casi di estese stenosi cicatriziali dello esofago trattate, negli ultimi due anni, con la trasposizione retrosternale di un'ansa isolata del colon. In 4 casi furono trapiantati la metà destra del colon e la porzione terminale dell'ileo; in 1 caso fu trapiantato, invece, il colon trasverso con la flessura splenica. La continuità del tratto intestinale fu ristabilita in 4 casi con un'anastomosi ileotrasversa e in un caso con un'anastomosi colocolica dell'ascendente con la porzione sigmoidea del colon. Una estremità dell'ansa isolata venne impiantata, in 4 casi, nello stomaco in senso isoperistaltico ed in 1 caso in senso contrario. L'altra estremità fu inserita alla regione cervicale dove, in 4 casi un ileostomia o colostomia servì ad alimentare il paziente, dopo che durante la fase ricostruttiva, gli era stato introdotto un tubo di gomma nello stomaco. In un secondo momento si praticò un'anastomosi terminolaterale della porzione cervicale dell'esofago con l'ileo o il colon; e in un terzo stadio si chiuse l'ileostomia. Tutti i pazienti vennero dimessi con ottimi risultati dal punto di vista funzionale e tutti notevolmente aumentati di peso.

La trasposizione retrosternale attraverso il mediastino anteriore presenta molti vantaggi quali l'assenza di complicazioni pleuriche e un tratto di colon mobilizzato minore di quello richiesto nella trasposizione sottocutanea. La sostituzione dell'esofago con il colon destro è il metodo d'elezione data la trasposizione isoperistaltica. Può verificarsi che un'anomalia dell'arteria colica destra precluda l'utilizzazione del colon destro, ed in tal caso si preferisce l'utilizzazione del colon sinistro o trasverso.

the posterior fragment.

Forward and upward displacement will be limited by the teeth present in the posterior fragment, the maxilla and the upper buccal sulcus. Displacement of this fragment is important in outlining proper treatment. Displacement of the anterior fragment is downward and rotated to the injured side.

Treatment requires nicety of judgment, and consideration is given to the following general principles: when function, union and appearance are not involved, reduction need not be attempted; if function and prosthetic appliances are hazarded, reduction is necessary, and when appearance is the only reason involved, reduction becomes a question of judgment. A large number of fractures of the angle require only fixation of the anterior fragment in normal occlusion, with use of the soft tissues to hold the posterior fragment in alignment.

If forward displacement results in pressure on the last upper molar, this tooth is left in place until union is complete, then extracted to relieve the irritation to the mucous membrane and the painful bite (Fig. 10). If the posterior molars are absent, a saddle attached to a splint extending from the anterior fragment may be used for control of the posterior fragment, but not for reduction. Ivy and Curtis, as has been mentioned, recommend the use of a block to reduce and hold the fragment when it is edentulous. Lenormant and Darcissac[17] suggested that this fragment be held by a wire attached to the posterior fragment and fixed to a plaster cap with a hook, as described by Scogin,[18] to supply traction. The method has the disadvantage of the head cap, which rotates after a few days and releases the tension, thus permitting the fragment to become displaced. This principle has been modified by Fry, Shepherd, McCleod, and Parfitt,[19] to the use of metal cap splints (Fig. 11) fastened to the anterior teeth with an arm posteriorly around the face and attached by a wire to the posterior fragment (Figs. 12 and 13). Impaction of the posterior fragment into the anterior fragment may be used in selected cases, and direct wiring or a Lane plate may be employed (See Fig. 10).

Roger Anderson pins may be used, with the advantage of immediate mobility of the jaw.

The Edentulous Mandible: If the jaw is edentulous, there is, of course, no occlusion to lose. Reduction, therefore, depends upon three conditions: whether the fracture is going to interfere with possible future prosthetic appliances; whether a facial deformity will result, and whether there will be a delay in union. Such fractures are usually simple, and union is generally rapid (Fig. 14).

The principle of reduction is the same as that involved in fractures when teeth are present. Many of these fractures will unite in good position by the application of a simple bandage. Nevertheless, one should never be lulled into treating all edentulous jaws in this manner.

The Gunning[20] interdental splint is useful for fixation, or the patient's own dentures, wired together, make an effective splint. These can also be used with circumferential wiring around the dentures when there is marked displacement.

Fracture in the Molar Region: Fractures here are influenced by the presence or absence of teeth on the posterior fragment, and also by the obliquity of the line of fracture. When this line runs from above downward and backward, displacement is more likely to occur than when it runs from above downward and forward. The elevator muscles are less able to displace the fragment in an upward direction if the fracture line is down and forward (Fig. 15).

If a tooth is present, this will tend to resist and even to prevent displacement. When the line is downward and back, with

colon droit est considérée comme la méthode de choix, en raison de la transposition iso-péristaltique. Les anomalies de l'artère colique droite peuvent éventuellement empêcher l'utilisation du colon droit; dans ce cas le transverse ou le colon gauche peuvent être transplantés, de préférence à l'intestin grêle.

RESUMEN Y CONCLUSIONES

Se reportan cinco casos de estenosis cicatricial extensa del esófago tratada por transposición retro-esternal de un asa aislada de colon, durante los últimos dos años. En 4 casos la mitad derecha del colon y la porción terminal del íleon fueron trasplantadas; en un caso el colon transverso con el ángulo esplénico. El restablecimiento de la continuidad del tracto intestinal se efectuó en 4 casos por una anastomosis íleo transversa y en 1 caso por una anastomosis colo-cólica, de la porción ascendente del colon al sigmoide. Un extremo del asa aislada de colon se implantó en el estómago en 4 casos, en forma isoperistáltica, y en un caso en forma antiperistáltica. El otro extremo se llevó a la región cervical, en 4 casos se alimentó al paciente, a través de una ileostomía ó colostomía, introduciéndose un tubo de hule en el estómago durante los tiempos de la reconstrucción. En un segundo tiempo una anastomosis término-lateral de la porción cervical seccionada del esófago con el íleon ó con el colon se llevó a cabo y en un tercer tiempo se cerró la ileostomía. Todos los pacientes fueron dados de alta con resultados funcionales satisfactorios y con notable aumento de peso.

La transposición retroesternal a través del mediastino anterior presenta muchas ventajas tales como la ausencia de complicaciones pleurales y por el hecho de que requieren menor longitud de colon movilizado que la transposición subcutánea. El reemplazo del esófago por el colon derecho se considera el método de elección para la transposición isoperistaltica. Las anomalías de la arteria cólica derecha pueden eventualmente impedir el uso del colon derecho en cuyo caso el colon transverso, ó el colon izquierdo pueden trasplantarse, siendo estos preferibles que el intestino delgado.

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The noise of the mill is heard by many; the flour is seen by few.

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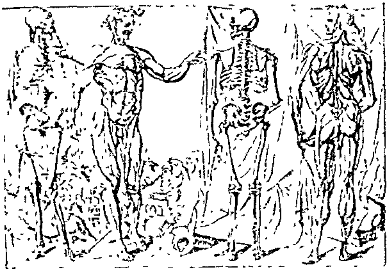
If a tooth is present, this will tend to resist and even to prevent displacement. When the line is downward and back, with of his works that did survive contained least of the essence of his searching mind. They were dogmatic rather than scientific and thus appealed to the dogmatic minds of the medieval scholastics. To doubt Galen was tantamount to heresy and to be avoided by all means.

It took a complete change of intellectual atmosphere like that brought about by the Renaissance to cut through the thick veil of adoration that surrounded the traditional authorities.

Of the cultural factors that brought about the Renaissance the most important, perhaps, was the recovery of the original texts of the classics. Medievalism had abundant versions of classical texts, but the authors were obscured rather than clarified by too many translators, commentators and glossaries. Another factor contributing to the rebirth of thought was the expansion of Europe, the widened horizons that were the results of the Columbian voyages and, more specifically for medicine, the importation of new and important drugs. Finally, it was the invention of printing in 1450 that made the cultural achievements of the Renaissance possible. The Renaissance, thought of as a rebirth of the thought of antiquity, was destined to go beyond the Greeks and to lay the foundation of modern thought and method, especially in medicine and the related sciences. New thought, however, could not easily be substituted for old beliefs, and fierce struggles occurred between those who strove for advance and those whose security lay in the *status quo*. The spirit of the Renaissance was expressed by Niccolo Leoniceno, one of the earliest botanists, who said, "Why has nature given us our eyes and other senses unless we may rely upon ourselves in the search of what is true?" This dictum could easily have applied to the Renaissance anatomists and surgeons, for they were among the first to deviate from tradition and to use their eyes and their senses to discover what was true.



Anatomic sketch of two skeletons and two muscle-men, after Rosso de Rossi, 1496-1541.

It is significant that the beginning of the study of human anatomy was made by one who was then and is now best known for his superb and unrivaled artistry. Leonardo da Vinci was a true humanist and a Renaissance personality in the most poignant sense of the term. His education combined philosophy with all other cultural subjects and medicine and the study of sciences with art. In his paintings his attention was often directed to the human body, and he felt that he could not do justice to the human body unless he understood it functionally and structurally. It was his plan, therefore, to write a textbook of anatomy; but, while many of his anatomic drawings have been preserved, they were less well known to his contemporaries than to us and of no influence on the anatomic thinking of his day. His textbook of anatomy was never published.

The real father of modern anatomy was Andreas Vesalius, who lived from 1514 to 1564. He was a Belgian from Wesel, from which he derived his name, and studied medicine at Louvain in Belgium and afterward in Paris. In both places he found the instruction utterly conservative and entirely based on Galen's anatomic texts.

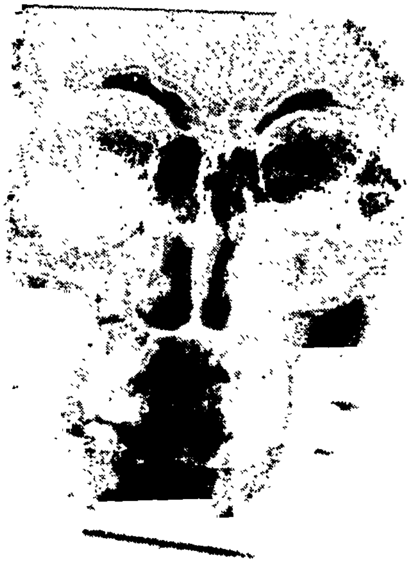


Fig. 18.—Compound comminuted fracture of symphysis immobilized with Kirschner wire, with internal fixation and multiple loop intermaxillary elastic traction. Lane plate holding posterior fragment.

applied to each mandibular fragment, the anterior ends left sufficiently long to overlap and bent to form a hook. A rubber band is stretched between the hooked ends, which exert force on the fragments away from the median line. When reduction has been accomplished, immobilization is obtained by intermaxillary wiring or cap splints. When no loss of bone is present the muscle groups are balanced and no deformity results, but if there is comminution the two main fragments are inverted and drawn toward the midline.

Period of Fixation. — An arbitrary period of thirty-five days is an average time limit for fixation of the uncomplicated fracture. This period varies from twenty-seven to forty-nine days and may differ with each patient. Young patients are held in fixation, as a rule, for a shorter period than are older ones. The basis of removal of fixation has been sufficient callus to maintain position when, on grasping the symphysis and the angle, spring in the fracture is absent, and also when function produces no noticeable movement by the patient. Roentgenograms seem to be of little or no help in determining the achievement of union, clinical union being present before it is demonstrable in the roentgenogram.

Fractures complicated by comminution, without infection and loss of substance, as well as bilateral and multiple fractures, require approximately the same period of fixation; those with infection, indefinite and varying periods.

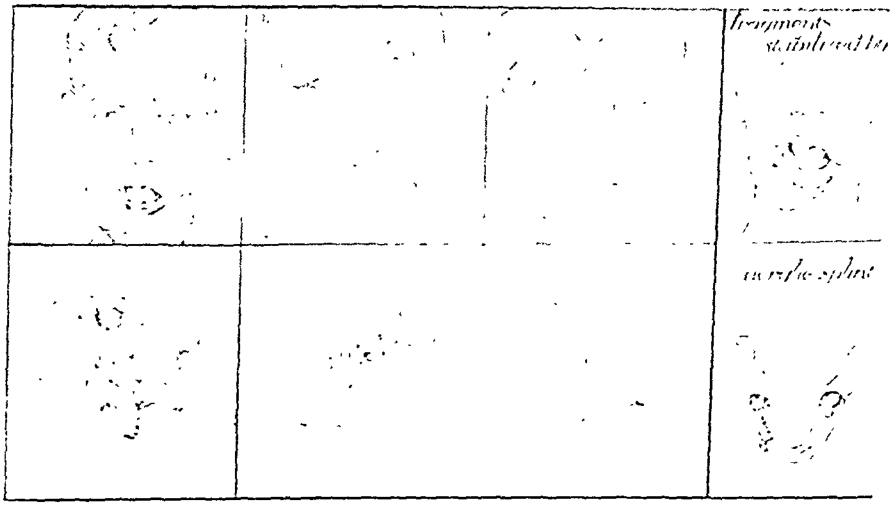


Fig. 19.—Gunshot wound; loss of symphysis, lower lip and chin. Comminuted fracture of symphysis maintained in position by acrylic splint.

The experiences of Paracelsus, the Critic, and of Vesalius, the Observer, helped to instil caution into the third great figure of Renaissance surgery, Ambroise Paré. Paré, the Experimenter, was born in 1510 and died in 1590. He was entirely different from the two other medicosurgical heroes of the Renaissance. Vesalius and Paracelsus were well educated: Vesalius had laboriously demonstrated that Galen's facts were false. Paracelsus had rebelled against tradition and attacked Galen with violence. Paré was not educated. His incentive was not rebellion, it was not even the conscious desire for scientific observation, it was compassion for those who suffered. He was born in 1510 and had been apprenticed as a boy to a barber. During his apprenticeship he clipped the hair of his clients, he shaved and bled them, he pulled their teeth and dressed their wounds, and with all these ministrations he felt more and more attracted to surgery. In order to learn more about surgery, he went to the Hôtel Dieu (Hospital of God), which is still a place of refuge for those for whom society does not make other provisions. In Paré's days it was a dirty and totally neglected place, and the nursing staff, composed of sisters of charity, was entirely untrained. Each bed was occupied by several patients, and the operating room was in the corner of the vestibule. It was here that Paré received the beginnings of his surgical education.

In 1536 the war, which had helped Vesalius in his decision to leave Paris, called Paré into the Army. He became a regimental surgeon, and while the French laid siege to Turin Paré saw with helpless compassion how badly mutilated and wounded soldiers whom he could not help were relieved of their suffering by being shot by an old soldier. In the course of this campaign, which reached Milan, Paré introduced his first great innovations concerning the treatment of gunshot wounds. Gunshot wounds were the new features of warfare, as fearful and awesome as the newest weapons appear to us now.

Drawing in Red Chalk Made by Jan van Kalkar for the Vesalius Treatise

From *De Corporis Humani Fabrica*, 1543, by Andreas Vesalius.

Gunpowder had been invented in 1320 by Berthold Schwartz and guns and cannons were in general use in the fifteenth century. In the sixteenth century muzzle-loading arquebuses had been developed, which emitted balls of the size of a walnut and inflicted horrible wounds. The earlier weapons, swords, lances, and battle axes, had made clear, open wounds that were usually but slightly infected, but the gunshot wounds were deep and narrow; they usually contained bits of clothes and filth and led to severe infections.

Somewhat earlier Giovanni de Vigo, a

In the therapy of fractures, antibiotics and the sulfonamides are used only when indicated, e.g., for elevation of temperature and signs of infection.

One phenomenon observed by those who treat fractures of the jaws, is the fact that roentgenographic evidence of the formation of radiopaque callus does not occur for many months. Therefore, a fracture which on clinical examination is completely united, may appear on a roentgenogram to be ununited. It should be pointed out, accordingly, that we cannot definitely depend upon the roentgenogram for evidence of positive bony union.

SUMMARY

Fractures of the upper and lower jaws are discussed from the standpoint of immobilization, reduction and fixation of the bony tissues.

Methods of reduction are presented, and various appliances currently used for fixation are listed. The technic of application of these devices for each common site of maxillary and mandibular fracture is described.

It is emphasized that early immobilization, reduction and fixation of fractures of the jaws is a primary factor in obtaining satisfactory occlusion, bony union and restoration of the anatomic, functional and cosmetic status.

ZUSAMMENFASSUNG

Brüche des Ober- und Unterkiefers werden vom Standpunkt der Ruhigstellung, der Einrichtung und der Fixierung der Knochengebilde erörtert.

Es werden Methoden der Einrichtung der Brüche beschrieben und verschiedene Apparate aufgezählt, die zurzeit zur Fixierung benützt werden. Die Technik der Anwendung dieser Apparate für die verschiedenen häufig vorkommenden Lokalisationen der Ober- und Unterkieferbrüche wird beschrieben.

Es wird hervorgehoben, dass frühzeitige Ruhigstellung, Einrichtung und Fixierung der Kieferbrüche von primärer Bedeutung zur Erfielung einer befriedigenden Schlussbissstellung, knöcherner Heilung und günstiger anatomischer, funktioneller und kosmetischer Resultate sind.

RESUMEN

Las fracturas de los maxilares superiores e inferior se discuten desde el punto de vista de la immovilización, reducción y fijación de los tejidos óseos.

Se presentan métodos de reducción y varios artefactos usados para fijación se enumeran. Se describen las técnicas para aplicar estos artefactos para cada sitio común de fracturas de los maxilares.

Se enfatiza que la temprana inmovilización, reducción y fijación de las fracturas de los maxilares es un factor primordial para obtener oclusión satisfactoria, unión ósea y restauración del estado anatómico, functional y estético.

RIASSUNTO

Vengono discusse le fratture del mascellare superiore ed inferiodal punto di vista della immobilizzazione, riduzione e fissazione del tessuto osseo, presentati i metodi di riduzione e menzionate le tecniche correntemente usate per la fissazione. E' descritta inoltre la tecnica di applicazione delle protesi per ogni tipo di frattura.

Si sottolinea, infine, come il fattore più importante per ottenre una soddisfacente occlusione, il saldamento delle ossa e il ripristino dello stato funzionale, anatomico ed estetico sia la precoce immobilizzazione, riduzione e fissazione delle fratture del mascellare.

vented a number of prostheses: artificial eyes, and arms and legs which even had a mechanism to bring about their movement. He recommended and practiced postoperative massage and implanted teeth, which were taken from paid living donors.

It is interesting that this theory of the possibility of implanting teeth taken from donors persisted for several centuries after Paré. Even John Hunter practiced this method and wrote on it, expressing his complete conviction that teeth thus grafted would take root and be usable in their new environment. Altogether, most of Paré's inventions entered surgical practice sooner or later. Their impact was not as immediate as was to be expected, because of Paré's humble origin and the fact that he did not belong to the "inner circle" of scholars, but it is entirely owing to Paré that surgery became a skilled craft. Paré based his surgical operations on the anatomic writings of Vesalius and was thus the first surgeon to relate surgery to anatomy. Significantly, Paré had to keep his reliance on Vesalius' works a secret as long as Sylvius, Vesalius' teacher, was alive in Paris. Paré's position in the hierarchy of medicine was too uncertain for him to admit his spiritual fellowship with one who had disproved Galen. With the death of Sylvius this caution was no longer needed, and Paré's later writings rely openly on the works of Vesalius.

Paré's surgery remained the preferred mode of surgery for two hundred years. that is, until the arrival of the great surgical scientists of the eighteenth and nineteenth centuries. It took John Hunter to turn surgery into a science, Joseph Lister to introduce antisepsis to prevent infection, and the Americans, Long, Wells, and Morton, to provide the blessings of anesthesia and to abolish pain in operations. As was said earlier, Paré raised surgery from a trade followed by menials to a skilled craft carried out by trained men. After Paré's time, surgery became more and more a part of medical education, and the distinction between the "surgeons of the long robe" and the "surgeons of the short robe" was broken down. Surgery and the surgeon had become respectable.

Throughout his writings one cannot help to be impressed by Paré's gentleness and humility. Over and over again he stated his credo concerning his success with every one of his patients. "I dressed his wounds—God healed him," is his recurring summary of each recovery. His accidental use of the controlled experiment led him to perform others and to be inclined toward experimentation in general. Thus, when once called to treat a man whose face had been badly burned, Paré decided to try out a remedy of which he

Anatomic plate from the works of Pietro Berrettini's *Tabulae Anatomicae*, Rome, 1741.

Repair of Extensive Defects of the Scalp and Skull with Autogenous Tissues

J. J. LONGACRE, M.D., D.A.B., AND G. A. DeSTEFANO, M.D.
CINCINNATI, OHIO

OWING to improved neurosurgical care after injury to the head, more patients are surviving severe and mutilating trauma to the cranial vault and soft tissues. Resection of tumors of the skull and radical excision of the cranial bones for chronic osteomyelitis also produce extensive voids. In addition, as the result of intensive radiation therapy and radical surgical ablation of recurrent carcinoma, large defects of the cranium and its coverings are often produced.

It is well known that a bony defect of the skull shows little or no tendency to spontaneous repair except in young children and then only after a portion of it has been removed for osteomyelitis or for craniosynostosis.

Analyzing our results with a large series of autogenous bone and cartilage grafts to the head and face, we have been impressed with the permanence of autogenous bone and cartilage transplants in contrast to the variance in absorption of homologous grafts, and with the increase in complications (infection, the collection of serum, foreign body and occasional extrusion, discomfort on exposure to heat or cold) following the use of foreign substances. In World War I, silver and lead had been used only to be condemned. Gold and platinum also were used but they proved too expensive and often were not well tolerated. Celluloid was also used but produced severe foreign body reactions.

As a result of these poor follow-up results at the beginning of World War II, surgeons were in general agreement that only autogenous bone obtained from the outer table of the skull, rib or ilium was reliable for the reconstruction of cranial defects. In spite of this, the use of tantalum by Pudenz and Odom[1] in 1942 was picked up with great enthusiasm. It became the popular method of cranioplasty, only to be challenged by the later use of plastic substances (acrylic and polyethylene).

At first few complications were reported. Again time was needed to assay the results. Elkin and Holbrook[2] reported complications in 12.3 per cent of 130 cranioplasties with tantalum plate and in 10 per cent of 66 cranioplasties with lucite. In 1947, Lane and Webster[3] observed that, of 115 tantalum plates inserted for the Veterans Administration, 52 had been removed. Scott and Wycis[4] reported a failure rate of 18 per cent when stainless steel was used for cranioplasty. In contrast to the aforementioned late results, Delageniere[5] in 1915 reported 104 cases of tibial osteoperiosteal grafts to defects of the skull with only 2 failures. Grant and Norcross[6] reported only 3 unsatisfactory results (5.1 per cent) in 58 cases of autogenous bone grafts to the cranium. Woolf and Walker,[7] in a collective review of cranioplasty, concluded that defects up to 8 cm. in diameter may be repaired with bone but that alloplastic substances are desirable for larger defects.

From the Plastic Surgical Service, Christ Hospital, Cincinnati.

Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-13, 1956.

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Abstracts from Current Literature

Primary Malignant Neoplasms of the Duodenum. Ochsner, S., and Kleckner, M. S. Jr., J.A.M.A. 163:418, 1957.

Only radiologic diagnosis can provide early enough recognition of tumors involving the duodenum to allow resection of the lesion. While the radiologist must be particularly alert to the less common lesions of the alimentary tract, he must be equally aware of the factors that may obscure the lesions during the examination.

Of 17 duodenal lesions observed at the Ochsner Clinic, 14 were diagnosed as adenocarcinoma and 3 as sarcoma.

The tumors were classified into suprapapillary, peripapillary, and infrapapillary types, each of which has rather characteristic clinical manifestations.

Prompt surgical exploration and excision or palliative procedures should be carried out.

William E. North, M.D.

Pulmonary Cystic Disease: Physiologic Studies and Results of Resection. Siebens, A. A.; Grant, A. R.; Kent, D. C.; Klopstock, R., and Cinotti, J. J., J. Thoracic Surg. 33:185, 1957.

Pulmonary cystic disease is discussed from the standpoint of interpretation of pulmonary functional tests, variability in physiologic deficit and end results of excisional therapy. Six cases are reported in detail. No characteristic abnormality accompanies pulmonary cystic disease. Large cysts may produce minimal or extensive physiologic deficits. The patency of the communication, the index of alveolar mixing and the degree of compression of the surrounding normal lung are important factors in determining the ultimate prognosis. Excisional therapy of the cysts produces excellent results from both the symptomatic and the physiologic point of view.

Ernest G. DeBakey, M.D.

Pneumoperitoneum as a Space-Occupying Procedure in Conjunction with Pulmonary Resection. Buechner, H. A.; Ziskind, M. M., and Strug, L. H., J. Thoracic Surg. 33:229, 1957.

In the authors' opinion a "space-occupying procedure" is not necessary after pulmonary resection from the standpoint of preventing overdistention of the remaining lung but should be considered in order to preserve pulmonary function, eliminate dead space and prevent reactivation of residual foci of tuberculosis. They are convinced that artificial pneumoperitoneum will serve this purpose. They found this procedure is selective, produces no deformity or complications and is simple to perform. It is instituted several weeks before the operation and two weeks thereafter and is maintained for two months.

Ernest G. DeBakey, M.D.

Proctosigmoidoscopy: Incidence of Polyps in 50,000 Examinations. Portes, C., and Majarakis, J. D., J.A.M.A. 163:411, 1957.

Proctosigmoidoscopic study was accomplished in 50,000 cases, with 1 instance only of perforation, by observing these precautions: digital examination of the rectum before inserting the instrument, blind insertion of the instrument only as far as the finger had explored, infrequent use of air inflation, special care in passing diseased segments, and care not to push the instrument forcibly against the intestinal wall until the lumen ahead had been identified. All subjects were asymptomatic and between the ages of 20 and 76. Polyps were observed in 3,952 cases. Of these, 328 were malignant. In addition, 19 instances of moderately advanced rectal carcinoma were noted.

Digital examination and proctosigmoidoscopic study are effective in the early detection of malignant neoplasm. The early removal of rectal polyps will prevent many carcinomas of the colon.

William E. North, M.D.

bone and the infraorbital plate. Nothing was done to elevate the malar bone, and six months later we were asked to correct the defects. This was done with carved autogenous cartilage implants and the ptosis of the left eyelid was corrected with the Blaskovics procedure. Figure 3*B* shows the degree of improvement attained but also illustrates the tendency

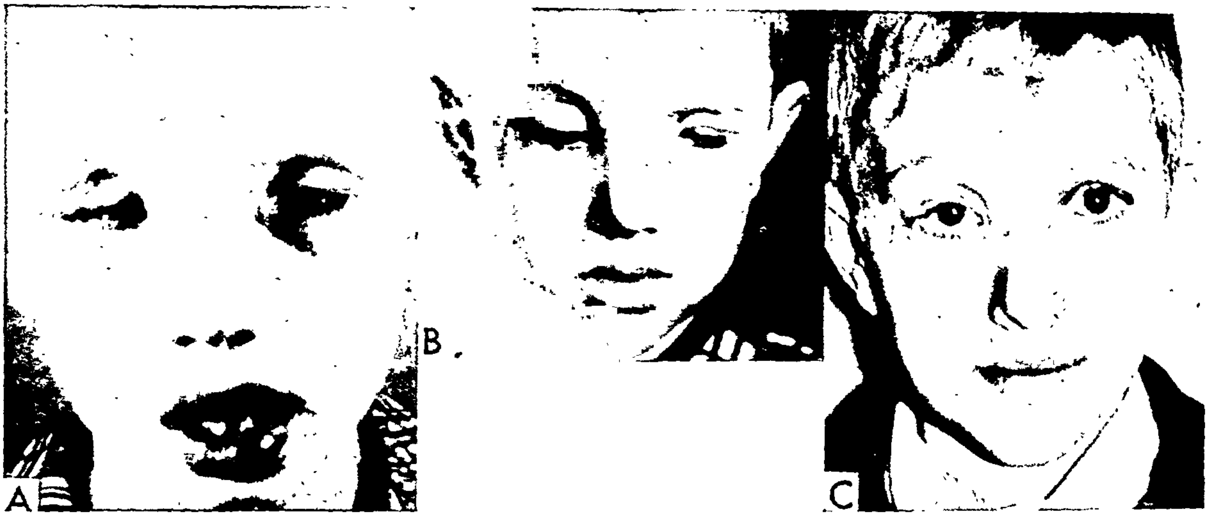


Fig. 2.—*A*, defect secondary to crushing injury of right frontal and temporal areas and middle third of face. *B*, patient after left dacrocystorhinostomy to correct blockage of nasolacrimal duct. Cartilage has been implanted to elevate right orbital floor and to correct retrusion of middle third of face. *C*, patient four years after correction of defect with autogenous cartilage graft.

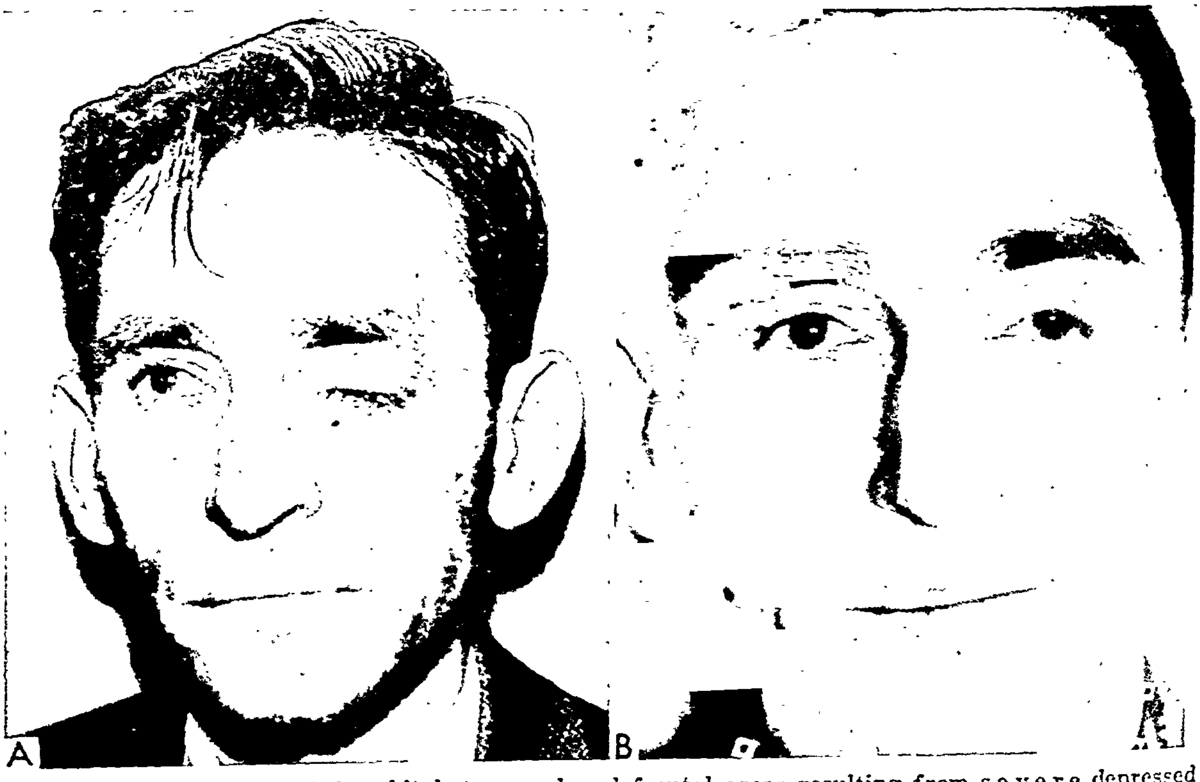


Fig. 3.—*A*, deformity of left orbital, temporal and frontal areas resulting from severe depressed fracture of skull. *B*, reconstruction of bony deformity with autogenous cartilage, which shows slight tendency to curl. Diplopia has been corrected with cartilage graft to elevate orbital floor, and ptosis of eyelid by Blaskovics procedure.

CATARACT SURGERY

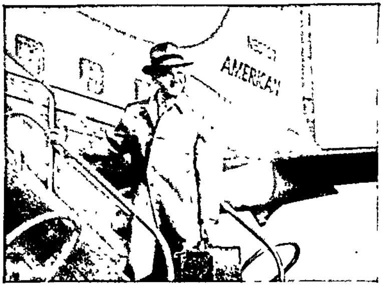
BY

ROBERT H. G. MONNINGER, M.S., M.D.

EVANSTON, ILLINOIS

The delineations of the technique of intracapsular lens extraction as discussed in Arruga's textbook of Ocular Surgery are many ranging from the method of akinesia and anesthesia to the stages of operation and instruments used. This article will describe in general Arruga's method of cataract surgery.

Anesthesia is effected by topical instillation of 3% cocaine, or a derivative, and 1:1000 adrenalin, combined with a 1 cc. retrobulbar injection of 2% novocain, or a derivative, made through the lower lid or through the conjunctiva with the lower lid pulled downward. The Van Lint-Rochat technique for akinesis of the orbicularis muscle is employed using a mixture of 2% novocain and adrenalin. A blepharostat is used to retract the lids, and a canthotomy may be performed to further widen the lid opening. A suture is passed through the tendon of the superior rectus muscle and held by an assistant to fixate the globe. The conjunctiva and episclera of the lower hemisphere are held with fixation forceps preparatory to making the corneal section. Using a Graefe knife the puncture is made in the maximal horizontal diameter and 1 mm. from the conjunctival limbus, and the counter-puncture is made on the opposite side 1 mm. from the corneal limbus. The section is then continued in the limbus, inclining the blade upward or backward depending on whether the intent is to complete the cut in the cornea, or to leave a conjunctival flap. A central suture is placed, passing through limbal conjunctiva and the posterior edge of the section, or through the center of both lips of the wound. A knot is made and the suture is left slack. A peripheral iridectomy, or two iridotomies, one on each side of the central suture, is performed by having the assistant raise the cornea while the surgeon grasps the root of the iris with an iris forceps and cuts it with a de Wecker scissors. If blood appears in the anterior chamber, it is removed by cannula irrigation. A cataract hook is held in one hand and placed in the lower cul-de-sac while the closed lens forcep is introduced into the wound and passed across the pupil to lie on the anterior-inferior surface of the lens below the iris. The forceps is lifted and opened 4 mm. and the lens is pressed backward slightly. The forceps is closed and the lens is pulled toward the pupil and rocked from side to side. After the lens is freed inferiorly, the hook is placed at the lower limbus and moved toward the wound opening while the forceps rotation is continued. The lens is expelled, its lower surface clearing the posterior surface of the cornea and emerging first. This is the tumbling technique. The iris is replaced with a spatula and the wound suture is tied. Two more sutures are placed, one on each side of the central suture. Antiseptic and miotic ointments are instilled, and a dressing is applied with a protective device over this, and held in place with an adhesive substance.



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sive area of roentgen dermatitis, telangiectasia and alopecia developed (Fig. 4*A*). Recently chronic ulceration had occurred in the region of the eyebrow. Owing to the recurrence of malignant disease extending along the pericranium and involving the supraorbital ridge, a radical block resection of the entire area, with radical removal of the outer table of the skull and the supraorbital ridge, was required to extirpate the lesion completely. The defect was then reconstructed with an Italian arm flap. Figure 4*B* reveals the final reconstruction. No bone was required in this instance to obtain an excellent functional and cosmetic result.

Case 5.—Several years ago, we were called in consultation to see D. O., a 2-year-old child (Fig. 5*A*) who had survived total destruction of 40 per cent of the skull and its coverings, exposing the coverings of the left cerebral and cerebellar hemispheres in the anterior, middle and posterior fossae. The child seemed alert, and after the surface infection had been brought under control, the granulating surface was covered with postage stamp grafts (Fig. 5*B*). There was an excellent "take," and soon the entire surface was epithelized. The child was provided with a football helmet, which likewise presented its problems. It was decided, therefore, to mobilize the scalp from the intact side as a flap (Fig. 6*A*) and later to rotate this over the defect after having excised the previously grafted area. The exposed pericranium on the right was then reconstructed with deep intermediate grafts removed from the abdomen. After this had been healed for months and there was no recurring infection, it was decided to repair the skull defect. Dr. Edgar Lotspeich, the neurosurgeon, and the authors decided to work as a team.

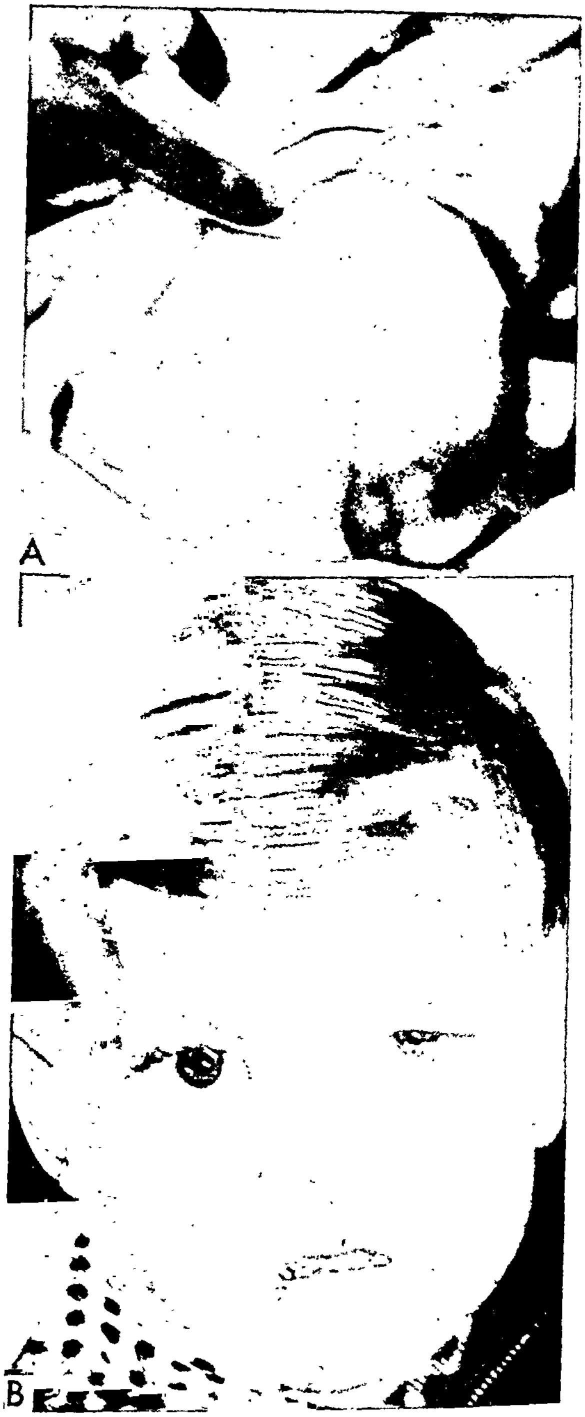

Fig. 6.—*A*, flap mobilized from normal side of scalp. *B*, patient two and one-half years after completion of reconstruction (skull and overlying scalp).

As a result of analyzing our results with 146 autogenous bone and cartilaginous grafts to the head and face, we were impressed with the permanence of the autogenous osseous transplant and the manner in which it would stand up under reactivated infection. In addition, we had direct evidence in measurements and moulages of the continued growth of these grafts in young patients observed during the growing period for six to eight years. Since the defect in the skull now measured 14 cm., having increased 1.5 cm. in diameter during the past year, it was felt that four full-length rib grafts, taken in four separate operations and then split, would provide sufficient autogenous bone. This was carried out in stages, and even though after two operations there was some purulent drainage from the cerebral wounds, they healed without the extrusion of a single fragment of bone. In-

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The Thigh Lift

JOHN R. LEWIS JR., M.D., F.A.C.S., F.I.C.S.

ATLANTA, GEORGIA

IT has been said that the plastic surgeon is the greatest of contemporary artists, for he paints on living canvas and carves sculpture in human flesh. It is not only the patient with a facial defect or blemish who appreciates the efforts of the plastic surgeon, and it is with areas apart from the face that this article deals.

Today, increased knowledge of cardiovascular disease has led to the realization that obesity is a definite handicap to longevity. One sees increasing numbers of persons who have, under medical supervision, lost their excess weight. In those so fortunate as to have only a reasonable number of excess pounds to lose, the subcutaneous tissue and skin accommodate themselves and a degree of shrinkage occurs that does not reveal the degree of stretching formerly undergone by the skin. In excessively overweight persons, persons of advanced age or persons whose excessive weight has been present for years, the skin does not retain its elasticity and recuperative power. Even if the excessive weight is lost over a long period—one to two years—the skin still has not the degree of recovery that could be desired. With the present popularity of the trim figure and the reduction of the overweight, there will be more and more men and women who have relaxation of the skin and subcutaneous tissues not only of the face but about the body as well.

Procedures have been described for cutis laxa. These, for the most part, deal with the tightening and elevation of the redundant skin of the face and neck (meloplasty). Procedures have also been described for reduction of the overhanging pendulous abdomen (Fig. 1).

In some persons the redundancy of the skin is noticeable not only in the cheeks, neck and abdomen but in the breasts and thighs (Figs. 1, 2, 3 and 4). The procedure for management of redundant mammary skin in the male is similar to that for correction of redundancy in the female. If the redundancy is severe, it must be handled by complete excision of the redundant skin and transplantation of the nipple and the areola. A search of the literature, however, has revealed no satisfactory method of handling redundancy of the skin of the thigh.

With this problem in mind, a procedure was desired that would work no particular hardship on the patient, would preserve the circulation and could be carried out with a minimum of visible scarring and a maximum of possible benefit in appearance and comfort. Such a procedure, to fulfill the expected qualifications, should elevate the skin of the thigh and at the same time tighten the skin in a circumferential manner. Obviously, a complete circumferential incision about the thigh, with elevation of the skin and subcutaneous tissue, would best accomplish the elevation, whereas a long vertical incision down the thigh, with wide elliptic excision of skin and subcutaneous tissue, would accomplish only a tightening of the skin and subcutaneous tissue. The first part of this procedure has the disadvantage of interfering with the blood supply to the edge of the skin below the point of exci-

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Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-13, 1956.

Submitted for publication Jan. 10, 1957.

High Honors to Prof. Carlos Gama

President, International College of Surgeons

To the long list of awards and distinctions earned by **Prof. Dr. Carlos Gama, F.I.C.S.,** President of the International College of Surgeons, has been added still another, his appointment as Secretary of Health and Social Assistance of the State of São Paulo. The appointment was made by **Governor Janio Quadros** and was formally accepted by Prof. Gama on March 28 at the Secretariat headquarters, in the presence of many State dignitaries gathered to do him honor.

The State Secretary of Justice, **Dr. Lincoln Feliciano,** delivered the opening address and presided over the ceremonies that followed. The retiring Secretary of Health and Social Assistance, **Dr. Coutinho Cavalcanti,** then formally released the office to Prof. Gama, who expressed his appreciation in a brief but moving address.

"As I assume the responsibilities of the Secretary of Health and Social Assistance," he said, "I arrive at an extremely important point, not only in my own career but in opportunity to serve my fellowmen. . . . It is well known that I am inexperienced in State politics, but my organizational experience, on the other hand, has been fairly extensive. For some years I have been affiliated with medical organizations of various types; among these are the Neurological Section of the Associacao Paulista de Medicina, which I served as Director and later as a member of the Council of the Departmenta de Previdencia. In 1945, at the Second Medical Congress of São Paulo, I was asked to serve as President of the old Society of Medicine and Surgery of São Paulo. Later, as one of the founders of the Brazilian Section of the International College of Surgeons, I was chosen as the first President of the Section; then, successively, I became General Secretary of the College of South America, First International Vice-President of the College and finally International President, which office I hold today. Since the International College of Surgeons is the largest world-wide organization of its kind, I count this a high honor indeed. During the thirty years in which I have held office in our Charity Hospital I have seen many of my ambitions change from dream to reality.

"It is with the help of this experience that I hope to serve as Secretary of Health and Social Assistance in my native State, for it has taught me that to direct and to organize means to work with a group. Whatever the efforts made by the head of any group, they can be successful only when they are seconded by the loyal work of all direct helpers and members of the organization. I know and admire the work done by my predecessors in this office, and I know that the members of this secretariat are always willing to give their best efforts to the full discharge of its functions.

"I shall begin work immediately on the new and challenging task with which I have been entrusted and will do my utmost to acquit myself worthily."

Those who know Prof. Gama and have worked with him cannot doubt that he will not only acquit himself worthily but add new lustre to the office he assumes. In addition to the experience mentioned in his address. Prof. Gama has served as Professor of Neurology at the University of Bahia, Professor and Head of the Department of Neurology of the Medical School of São Paulo, Chief of the Neurologic Clinic of Santa Casa de Misericordia and President of the Academy of Medicine. As a Fellow of the International College of Surgeons and now its President, he has spared no effort in his support of the causes he believes in. His colleagues will extend their warmest congratulations not only to Prof. Gama himself but to the State of São Paulo and the Governor thereof for his wise and perceptive choice of a leader so outstanding.

sult. My own preference is for a doubled Type A white nylon suture in the subcutaneous tissue; a small bite of the dermis it taken to permit the main tension sutures to be tied subcutaneously, and single Type A white nylon sutures are used in layers in the fatty tissue and in the dermis between the spaced buried tension sutures. Skin sutures of No. 5-0 black silk or subcuticular No. 4-0 monofilament nylon sutures are used. A snug ace bandage is applied over the sterile dressing from the toes to the upper part of the thigh, and a snug pressure dressing is applied over the inguinal incision. The patient is kept in bed with the feet elevated for the first twenty-four hours, after which he may be up and about *ad libitum* with the elastic bandages in place. Elastic bandages or elastic stockings are desirable for two weeks, with supportive dressings on all the incisions as required. Postoperative pain is surprisingly mild.

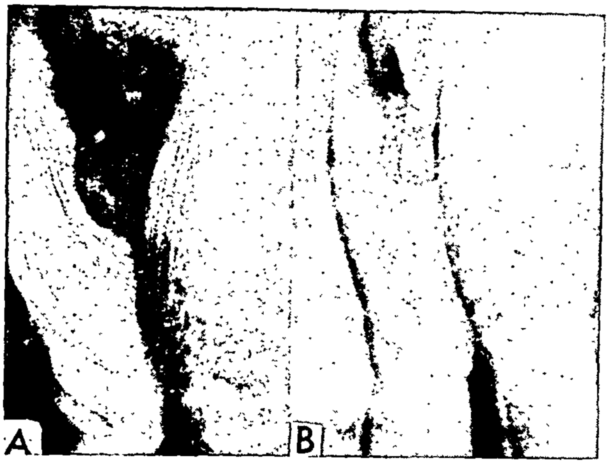


Fig. 4.—*A*, redundancy and relaxation of skin and subcutaneous tissue of thighs. There is obvious need for lifting and tightening tissue in both vertical and horizontal directions. *B*, improved appearance of thighs, accomplished with inconspicuous scars.

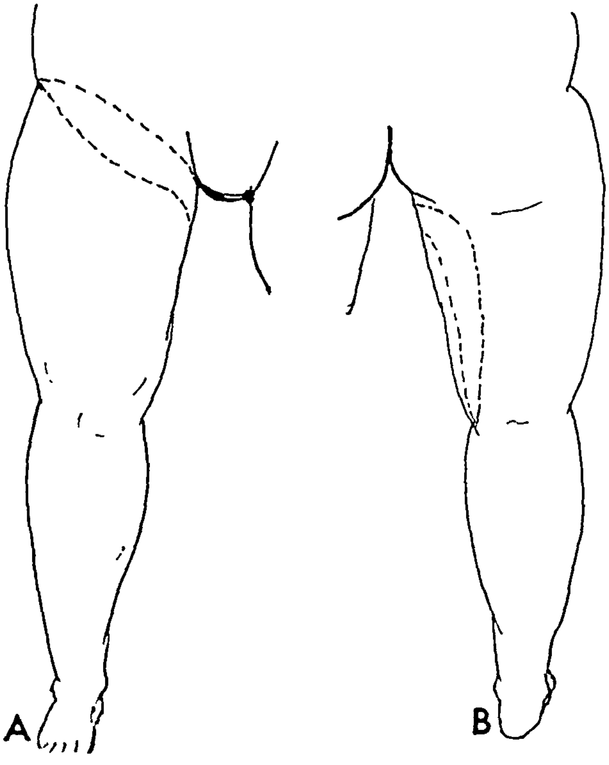


Fig. 5.—*A*, transverse elliptic excision is carried out so that resultant scar lies along inguinal crease. Tissue at lower incision should be beveled out to edge of skin to avoid embarrassing the circulation to the cutaneous edges. *B*, vertical excision lying along posteromedial aspect of thigh. This accomplishes tightening, while transverse excision accomplishes lifting.

SUMMARY

A technic for reduction of the redundancy of the skin and subcutaneous tissue of the thighs has been described to join the surgical armamentarium for reduction in the redundancy of skin and subcutaneous tissue of the abdomen, breasts, face and neck to improve the comfort and appearance of patients who have lost excessive weight. The author's limited experience with this operation, which was devised to solve a specific problem, has been satisfactory. He is convinced that in the future he can safely excise the skin and subcutaneous tissue more generously, thus obtaining a snugger closure and increasing the elevation of the ptosed and relaxed tissue. The comfort of the patient should not be overlooked, and convenience in the fitting of clothes is not a minor factor; the patient's self-confidence and improved psychic outlook after the operation, however, outweigh these other factors.

WHO'S WHO IN THE INTERNATIONAL COLLEGE OF SURGEONS

Prof. Dr. Arthur Hübner, F.I.C.S.

Professor Dr. Arthur Hübner, F.I.C.S., of West Berlin-Grünewald, Germany, was born on Aug. 29, 1887. Reaching young manhood, he studied medicine at the University of Berlin. After passing his State Board examination in 1913 he specialized in surgery. His many talents soon won him recognition; in 1927 he became a lecturer at the University, and in 1930 a Full Professor of Surgery.

Professor Hübner began his active career with an outpatient clinic of his own, where most of his work consisted of the emergency surgical treatment of accidental injuries. In 1945 he was appointed Medical Director of a municipal hospital in Berlin and retained the post with great success and esteem until 1952, since which time he has been engaged in private practice.

In addition to his central routine as a surgeon, Prof. Hübner found time and energy to serve as editor of two professional journals, *Der Chirurg* and *Monatsschrift fur Unfallkunde.* He is also the author of several important books, the titles of which indicate the wide range of his interests and the versatility of his character:

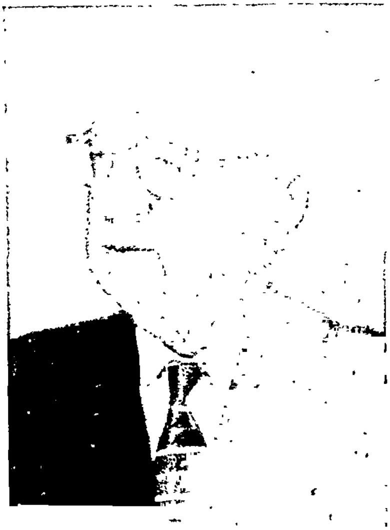
Lehrbuch der Gastroskopie (A Textbook of Gastroscopy)

Lehrbuch der Fraktures und Luxationen (A Textbook on Fractures and Luxations)

Arzthaftpflichtrect (The Liability Law Concerning Physicians)

Notoperationen und dringende Massnahmen des praktischen Artzes (Emergency Operations and Urgent Interventions Confronting the General Practitioner).

Since 1946 Prof. Hübner has been General Secretary of the German Surgical Society.



Dr. Arthur Hüber, F.I.C.S.

The possessor of well-merited national and international distinction, Prof. Hübner has never for a moment lost sight of the essential purpose of every Physician's and surgeon's career, the healing of injuries and diseases. Through his regular practice, his lectures, his books and his organizational activities this thread runs clear and strong. As a Fellow of the international College of Surgeons he is keenly aware of the world's great need for widely shared knowledge of surgical technic and dissemination among physicians and surgeons everywhere of all available data on research, new remedies, and modern surgical technics. He is first and foremost a surgeon, but he remains a student, both of surgery and human affairs, as is evident from his remarkable treatise on medicolegal problems. A severe critic o a

Faktoren, die nicht unterschätzt werden sollen, die jedoch weit in den Hintergrund treten gegenüber dem Selbstvertrauen und dem verbesserten Seelenzustand, dessen sich der Patient nach der Operation erfreut.

◆

Intellectual passions are not like appetites; they do not reach out to grab, but set out to enrich the world. Yet such a move is also an attack. It raises a claim and makes a tremendous demand on other men; for it asks that its gift—its gift to humanity—be accepted by all. In order to be satisfied, our intellectual passions must find response. This universal intent creates a tension. We suffer when a vision of reality to which we have committed ourselves is contemptuously ignored by others. For a general unbelief threatens to evoke a similar response in us which would imperil our own convictions. Our vision must conquer or die.

—*Polyani*

It is clear that experiment involves an even higher degree of abstraction than simple observation, for many more facts out of the total presenting are put in the discard, and this is why, perhaps, the experimental method, exclusively pursued, may prove somewhat narrowing to the mind, adverse to a philosophic generality of outlook, and to the free play of ideas ranging over the sum of presenting phenomena.

—*Walshe*

Before we shall ever be able to answer the question, why or how do tumours form? it seems to me we must be able to solve the problem of normal growth and development and to answer the question why or how it is that these continue up to a certain point and then suddenly cease.

—*Savory*

Scene in Tokyo, October 24. Left to right, Mr. Kimura, head of rug company; Prof. Dr. S. Kikuchi, F.I.C.S. Dr. H. Shiota, F.I.C.S. (Hon.), President of Japan Section, and Mrs. Kimura. Beautiful rug in background will be presented to the International Surgeon's Hall of Fame for its Japanese room. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

the true Japanese spirit. This gesture on the part of so highly respected and so lovable a man was one of our most impressive experiences.

The meeting that morning was held at Tokyo University, where we saw an amazing example of Prof. S. Kimoto's brain-cooling surgical technic. The organization and teamwork Dr. Kimoto achieved while performing his difficult operation were an inspiration.

The morning was memorable also for five other operations performed at the University of Tokyo. We were then conducted to the Tokyo Women's Medical College at Shinjuku, where we saw an impressive demonstration of the work of Dr. S. Sakakibara in solving some difficult problems of cardiac surgery. A full day of medical demonstrations was enjoyed by the entire party.

After the last demonstration the group returned to the hotel, and that evening all members of our party, including their wives, were entertained by a local Japanese group at a delightful dinner. After a short night's rest, we were called early next morning and taken by bus from the Imperial Hotel in Tokyo, through the

Scenes at Tokyo University. Above, a motion picture shows a cardiac operation by Prof. S. Kimoto. Below, left to right, Dr. H. Shiota, Dr. Owens and Dr. S. Kikuchi. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

recovered uneventfully. Gross observation of this specimen revealed a laceration in the middle of the anterior surface of the graft. There was some definite aneurysmal dilatation. The graft was surrounded by a mildly adherent fibrous sheath and by a large hematoma.

Microscopically, fragmentation and degeneration were observed, and at the point of aneurysm formation the elastic laminae of the media had completely disappeared.

The second patient, a 60-year-old man, died of coronary thrombosis and asthma twenty-seven months after the insertion of a freeze-dried aortic homograft obtained from a 24-year-old soldier after accidental death. Examination of this specimen showed a functional graft well surrounded by a fibrous connective tissue sheath. The lining was smooth, and the anastomotic sites showed union of the connective tissue to the aorta and common iliac arteries of the host.

Microscopic study revealed a smooth intimal lining, with preservation of fibrous connective tissue and of the elastic laminae. There was some degeneration and fragmentation of the media.

In essence, only autogenous arterial transplants serve as true grafts. Homologous transplants do not survive, but merely remain as functional blood-carrying tubes, the micro-anatomic structure of which gradually degenerates and is reinforced by invasive and circumferential supporting fibrous connective tissue cells of the host.[3]

Since this is true, suitable synthetic prostheses should behave in a similar fashion. Currently there is widespread interest in attempts to produce an entirely acceptable synthetic arterial substitute. Most investigators[4] have used cloth tubes made from synthetic fibers, such as vinyon-N, nylon, dacron, orlon, teflon and the like. These materials have functioned reasonably well as arterial substitutes, but they have several disadvantages that make them less than ideal. They are technically difficult to implant; they may leak excessively, and they have a tendency to wrinkle and become thrombosed.

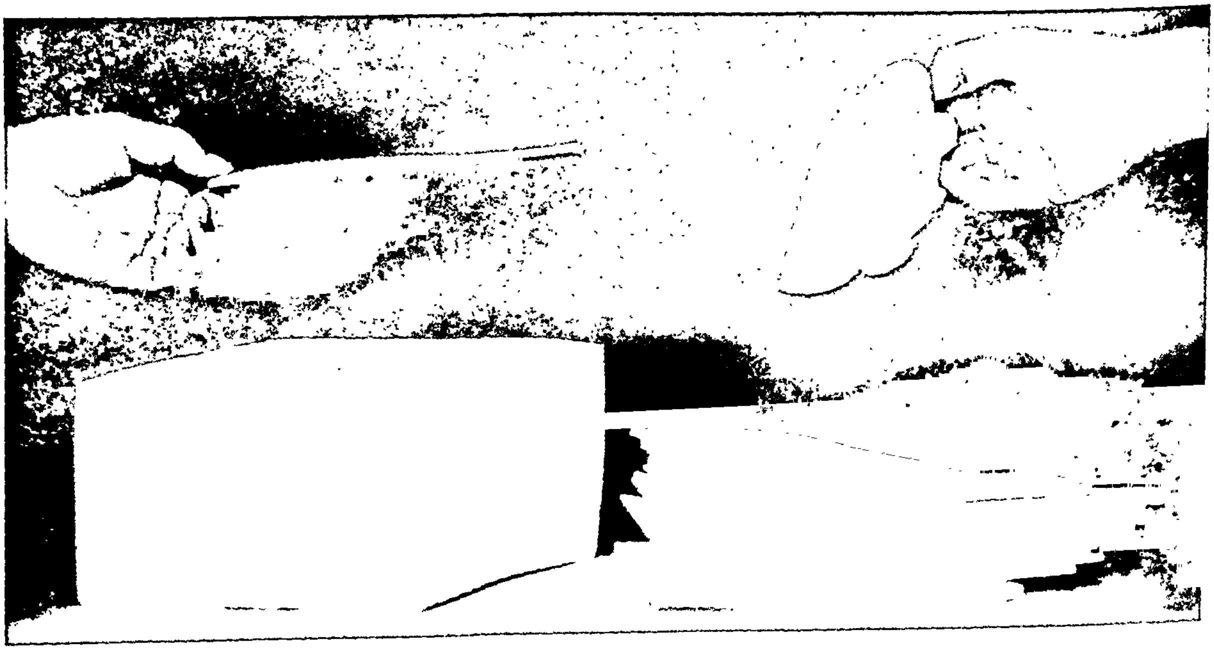
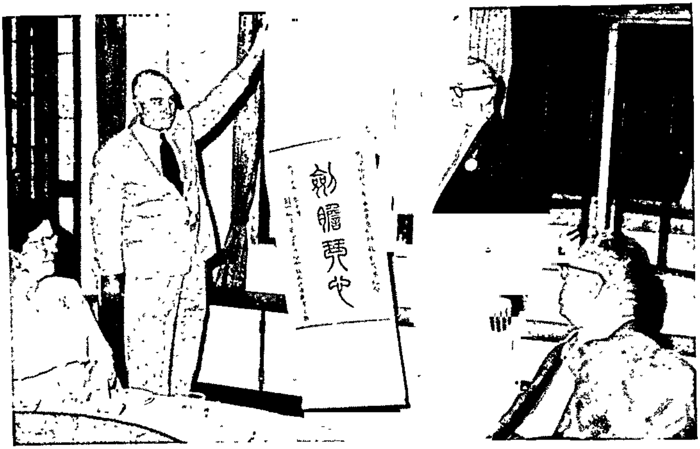


Fig. 1.—Ivalon block and slices.



Presentation of scroll to Dr. Neal Owens in Hong Kong. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

Visiting Fellows in the Philippines, after meeting with Dr. Quintos, Director of the Philippines General Hospital. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

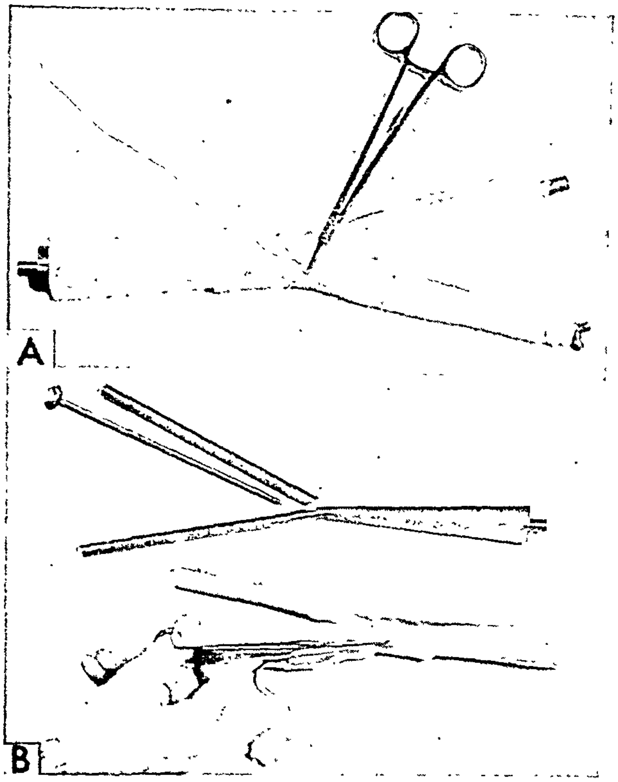


Fig. 3.—*A*, application of wet strips of Ivalon to bifurcation mold. *B*, removable leg of the bifurcation core.

properties necessary for the success of the finished graft.

Owing to lack of precision in several of the steps, the final test is still the clinical estimation by an observer experienced in constructing these grafts.

Sterile technic is achieved in any one of several ways. The graft can be used immediately, dropped into a sterile container to dry, re-autoclaved while dry in cellophane bags, or preserved in aqueous zephiran. If properly made, dried grafts reconstitute within twenty minutes in warm water (Fig. 2*B*).

A similar technic is used in the construction of a bifurcation graft. The special shape necessitates the tacking of the wet Ivalon strips with No. 5-0 silk (Fig. 3*A*). This is compressed and autoclaved in the manner described. Some facility must be available in order to remove the finished graft from its brass core. We use a removable "leg" to achieve this (Fig. 3*B*).

Again, we stress the fact that if this material is to yield a satisfactory graft it must be properly constructed. The minute technical details of this construction and the finer physiochemical properties of Ivalon, so important in the construction, are not pertinent to this discussion.

These Ivalon arterial substitutes closely resemble a normal artery. They are elastic and pliable in all directions and pulsate when carrying blood. They have a smooth, seamless internal surface, can be molded to fit the configuration of any vessel, are easy to suture to the host vessel and can be anastomosed to each other. They are durable and in fact become stronger as host tissue invasion progresses.[6] They are porous enough to permit proper invasion by vascularized fibrous tissue from the host and yet not so permeable as to permit excessive leakage of blood when first allowed to fill under arterial pressure.

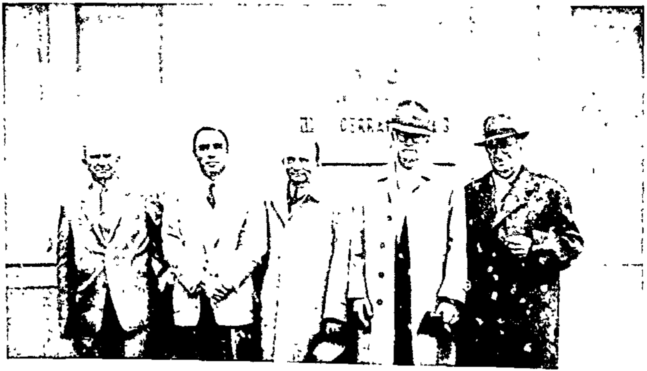
Biologically, Ivalon seems to be inert, having no carcinogenic properties,[8] and does not induce significant inflammatory foreign body reactions when the grafts are properly constructed.

The ready availability and adaptability of Ivalon arterial tubes are additional attractive qualities. With regard to this, their chief disadvantage would seem to be the necessity for extreme attention to detail in proper methods of construction. In fact, despite earnest efforts, we find it difficult to construct Ivalon tubes of uniform porosity, pliability and density.

Ivalon blood vessels have been substituted for defects of the abdominal aorta of 22 dogs. Eighty per cent of these grafts have remained patent and functioned satisfactorily for as long as nine months, after which time the dogs were killed. Gross and microscopic observations of these transplants show: (1) the formation of a smooth fibrinous internal lining; (2) circumferential and invasive support during the afternoon, at which papers were presented by Dr. Kahn, **Dr. Munawar Ali** and **Dr. Z. K. Kazi.** A luncheon at the Karachi Boat Club was given in our honor by Parke Davis and Company, with **Mr. and Mrs. E. V. Hopkinson** as host and hostess.

The next stop was the Hotel Caravan in Teheran, Iran, where we arrived on Saturday, November 17. On Sunday, November 18, a charming dinner was proffered us at the Hotel Metropole by the Iranian Section, whose Secretary, **Dr. E. Hazrati,** was most helpful throughout. Here we made the acquaintance of **Prof. Dr. Y. Abr,** President of the Section; **Dr. M. A. Sabr,** President-Elect, and **Dr. G. H. Mossadegh,** Vice-President. Also present were **General Dr. Nabjaf-Zaveh, Dr. M. Tezechvan, Dr. Essamly, Dr. N. Zarrabi** and **Dr. N. Ameli.** On Sunday, November 18, under the able management of Prof. Abl and Dr. Hazrati, an interesting program was offered by the Iranian Section in collaboration with **Dr. A. V. E. Ghbal,** President of the University of Teheran and Minister of the Imperial Court. In connection with this meeting we also met **Dr. J. H. Saleh,** the Minister of Health. We visited various surgical services and the Cancer Institute of the Pablavi University Hospital, where we watched Dr. Essamly operate for a cyst of the brain with multiple cysts of other organs. Later, at the Conference Hall of the University, we attended a scientific meeting with a series of excellent presentations. In the evening we attended a dinner given for us by the President of Teheran University, at the University Club.

Leaving Teheran with many regrets, we arrived in Istanbul Monday afternoon and were met at the airport by a group of Turkish surgeons, headed by Dr. Arel, President of the Turkish Section, and inincluding **Drs. Gurkan, Gorbon, Sezer, Nadipljlu** and **Maniyabe.** Our party was then checked into the Istanbul-Hilton Hotel, where on Tuesday we were met and called for by Dr. Arel and his associates and taken to the First Surgical Clinic of the University of Istanbul, which is the Cerrah Pasa Capital Hospital. There we saw many outstanding operations performed by Dr. Arel. Included were an operation for pericarditis, a "blue baby" procedure, cholecystectomies, operations for pyloric stenosis, etc. The clinical



Three Fellows of the College Arrangement Committee of the Turkish Section. At right, wearing hats, Dr. Neal Owens and Prof. Fabri Arel. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

ähnelt sehr dem des Arterientransplantats innerhalb der gleichen Art. Der menschliche Körper scheint das Material gut zu vertragen, und die funktionellen Leistungen der Ersatzstücke sind zufriedenstellend.

RESUMEN Y CONCLUSIONES

La reconstrucción arterial de grandes arterias por medio de esponja de Ivalon comprimida y moldeada ha demostrado ser aceptable y satisfactoria tanto en animales de experimentación como en pacientes humanos. Tanto el resultado fisiológico como el biológico con estos sustitutos sintéticos es muy semejante a los obtenidos con homoinjertos arteriales. Parecen ser bien tolerados por el cuerpo humano y sirven a satisfacción funcionalmente como sustitutos arteriales.

RIASSUNTO E CONCLUSIONI

La ricostruzione delle grandi arterie per mezzo dell'Ivalon in spugna modellata si è dimostrata soddisfacente così negli esperimenti come nelle applicazioni alla patologia umana. Vi è una stretta rassomiglianza fra le risposte fisiologiche e biologiche di questa sostanza con gli innesti omologhi. Essa è pertanto ben tollerata dall'organismo umano ed è soddisfacente dal punto di vista funzionale.

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La reconstruction synthétique des grandes artères s'est révélée pratiquable et même satisfaisante, aussi bien chez l'animal que chez l'homme. Les réactions physiologiques et biologiques des substituts artériels synthétiques ressemblent étroitement à celles des greffes artérielles homoeplastiques. Ils semblent être bien tolérés chez l'homme.

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A reconstrução de grandes arterias pela esponja de Ivalon pre-moldada demonstrou resultados satisfatórios tanto em animais como em seres humanos. As respostas fisiologicas e biologicas a tais substitutos sintéticos se parecem com as dos homoenxertos arteriais. Parecem ser bem toleradas e funcionalmente se comportam como substitutos arteriais.

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5. Grindlay, J. H., and Waugh, J. M.: Plastic Sponge Which Acts as a Framework for Living Tissue: Experimental Studies and Preliminary Report of Use to Reinforce Abdominal Aneurysms, Arch. Surg. 63:288, 1951.

6. Mortensen, J. D., and Grindlay, J. H.: Molded, Seamless Tubes of Polyvinyl Formal-

Opening session of the Tenth International Congress.

Audience with His Excellency the President of Mexico during the Tenth International Congress.

that the scientific program was remarkable in both quality and quantity.

Another Committee also deserves high honor, namely the Reception Committee, of which Dr. Eduardo M. Morgenstern was Chairman, Dr. Mario Gonzalez Ulloa Vice-Chairman and Dr. Oscar E. Davila, Dr. Agustin Diez de Urdanivia, Dr. David Gutierrez Garcia, Dr. H. P. de Kanter and Dr. Raul Santos Mazal assisting. More than one visiting surgeon may have felt privately that "Royal Reception Committee" would be scarcely an exaggeration, for a right royal welcome. Sharing these amenities on the feminine side was the Committee headed by Doña Gloria S. de Manzanilla, with Doña Guadalupe D. de Chavira and Doña Maria S. de Fonseca as Vice-Chairmen, Doña Emma M. de Mora as General Secretary and Doña Gertrudis A. de Manzanilla as Auxiliary Secretary. One of the pleasantest features of all Congresses is the opportunity it affords for busy surgeons' wives to enjoy the company of their husbands and that of their friends and fellow-workers for the advancement of the profession.

Since the first day of the Congress, February 24, is Mexico's Independence Day, the visiting Surgeons, accompanied by a full Guard of Honor, proceeded to the Columna de la Independencia, Paseo de la Reforma, to lay a wreath on the national monument to Mexico's heroes of independence.

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6. Mortensen, J. D., and Grindlay, J. H.: Molded, Seamless Tubes of Polyvinyl Formal-

His Excellency Morones Prieto, F.I.C.S., Minister of Health of Mexico, receiving honorary diploma from Prof. Carlos Gama, President of the International College of Surgeons, and Prof. Manuel A. Manzanilla, *Chairman of Arrangements for* the Tenth International Congress.

F.I.C.S., of Philadelphia; **Dr. Peter A. Rosi**, F.A.C.S., F.I.C.S., of Chicago; **Dr. Samuel R. Perzik**, F.A.C.S., F.I.C.S., of Los Angeles; **Dr. Moses Behrend**, F.A.C.S., F.I.C.S., of Philadelphia; **Drs. Saul Shapiro**, F.I.C.S., and **Daniel H. Manfredi**, F.I.C.S., of New York; **Dr. Sidney A. Rosenburg**, F.I.C.S., of Pittsburgh; **Drs. Emanuel M. Skolnik**, F.A.C.S., **Morris T. Friedell**, F.A.C.S., F.I.C.S., **Claude M. Lambert**, and **August F. Daro**, of Chicago; **Dr. James F. Dowd**, F.I.C.S., of St. Louis; **Dr. Salvador Castanares**, of Los Angeles; **Dr. Clifford L. Kiehn** of Cleveland; **Dr. Hebert G. Cohen**, F.I.C.S., of New York; **Dr. Carlos Scuderi**, F.A.C.S., F.I.C.S., of Chicago; **Dr. Joseph C. Risser** of Los Angeles; **Dr. George L. Kraft** of Hollywood and **Dr. Daniel H. Levinthal** of Beverly Hills, California; **Dr. Robert J. Kisitcheck** of Los Angeles; **Dr. Philip Thorek**, F.A.C.S., F.I.C.S., of Chicago; **Dr. Otto L. Bettag**, Head of the Illinois Department of Public Health, **Dr. Joseph da Silva** of the State Hospital, and **Dr. Leonard Krasner**, Consultant in Thoracic Surgery to the Department of Public Health, all of Chicago; **Dr. James M. Ovens**, F.I.C.S., of Phoenix, Arizona; **Dr. Aaron N. Gorelik**, F.I.C.S., of New York; **Dr. Herman O. McPheeters**, F.A.C.S., F.I.C.S., of Minneapolis; **Dr. Arthur Dallos**, F.I.C.S., of New York; **Drs. Philip S. Kline** and **Hesiquio N. Gonzalez**, of San Antonio; **Dr. Philip M. Marcus** of Beverly Hills, California, and **Dr. Louis T. Palumbo**, F.I.C.S., of Des Moines, and **Dr. Juan Negrin**, F.I.C.S., of New York.

Among the European participants were **Prof. Dr. Claude H. Carron**, Laureate of the Faculty of Medicine, Paris; **Prof. Dr. Alfonso de la Fuente** of the Faculty of Medicine, and **Prof. Dr. Francisco Martin Lago**, F.I.C.S., Madrid; **Dr. T. A. Dunkersloot** of Sneck, The Netherlands, and **Prof. Dr. Stefano Teneff** and **Prof. Dr. Domenico Dazzoni** of Turin.

Prof. Dr. Nahor Carrillo, Dean of the National Medical University of Mexico, delivers presentation, "Abscess of the Liver."

"Minor" Injuries of the Fingers

J. WALLACE McNICHOL, M.D., F.R.C.S. (Can.), F.A.C.S., F.I.C.S.

AND

ORVILLE J. MIREHOUSE, M.D.

HAMILTON, ONTARIO, CANADA

THIS title was chosen to emphasize by paradox the fact that injuries which interfere with the function of the hand are not minor.

The field of traumatic surgery of the hand is vast and important, so we propose to discuss only one small facet, namely, to illustrate the potentialities and adaptability of the so-called cross-finger pedicle procedure in the treatment of loss of soft tissue of the digits.

Iselin in 1946, and many writers since, have stressed the importance of these minor finger injuries and have advanced many and varied methods of treatment.

The important factors to consider are: (1) the important sensory function of the hand, especially the thumb, index and middle fingers; (2) the importance, especially to manual workers, of supple fingers of normal length, and (3) the fact that good skin covering is essential to both the aforementioned criteria and especially to prevent scarring and pain in the finger tips, which interferes grossly with the efficiency of the hand.

With these points in mind, the various methods of treatment should be mentioned critically.

1. Calculated neglect, i. e., treating the injury with dressings only. In such circumstances the wound heals slowly by granulation and usually leaves a firm, tender, painful fixed scar.

2. Replacement of the amputated part. This is occasionally successful, but more often the part is never found or is mutilated beyond the point of viability.

3. Shortening the digit to achieve primary closure of the skin. In rare instances this is the method of choice, but usually, after careful consideration, one of the methods of tissue replacement will give a far superior result.

4. Amputation of the digit at the site of election. This applies when complicated severe injuries to the skin, neurovascular bundles, bones, joints or tendons would preclude the return of useful function of the digit.

5. The use of free skin grafts. These grafts are highly valuable for *surface replacement only*. When loss of pulp or subcutaneous tissue is extensive, or when tendon or bone is exposed, pedicle coverage is much to be preferred.

6. The use of local flaps, which can occasionally be swung from the dorsal to the ventral surface of the same finger, with application of a Thiersch graft to the donor area. The indications for this method are limited.

7. The use of palmar flaps, which are widely used and very useful. The presence of a painful, tender scar on the pressure-bearing surface of the palm, however, is often a serious disability to a manual worker.

8. The application of pedicle flaps from other areas. Commonly the abdominal wall, the chest or the opposite forearm is used, but since the type of skin and fat in these areas is so unlike hand tissue one

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Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-12, 1956.
Submitted for publication Sept. 8, 1956.

WESTERN REGIONAL MEETING AN OUTSTANDING SUCCESS

The April meeting held at the Las Vegas Hacienda, in Las Vegas, Nevada, by the Western Region of the United States Section of the International College of Surgeons, was more than well attended and will be long remembered for both the excellence of the scientific program and the great pleasure afforded by the well-planned social events.

The official program covered a number of vitally important surgical fields. **Drs. Irving L. Lichtenstein, F.A.C.S., F.I.C.S.,** and **Martin S. Levy**, of Beverly Hills, California, offered a presentation on hyperthyroidism. The subject chosen by **Drs. A. Bernstein, F.I.C.S.,** and **Henry C. Bernstein, F.I.C.S.,** of San Francisco, was *An Historical Review of Cesarean Section.* **Dr. Frank E. Polmeter, F.A.C.S.,** of Sherman Oaks, California, discussed the causes of imperfect results in the surgical treatment of protruding lumbar and cervical discs. Modern advancements in the treatment of common fractures were outlined by **Dr. Reed S. Clegg** of the University of Utah School of Medicine, Salt Lake City. Other members of the same faculty who participated were **Drs. Preston J. Burnham, F.A.C.S., Thomas R. Broadbent, F.I.C.S., Mark H. Greene Jr., N. Frederick Hicken, F.A.C.S., F.I.C.S., A. James McAllister, Vernon L. Stevenson, F.A.C.S., Howard P. House, F.A.C.S., F.I.C.S., William F. House, Edward R. McKay, F.I.C.S., J. W. Mortensen, H. R. Warner, Perston J. Cutler, William Ray Rumel, F.A.C.S., L. George Veary, Robert G. Weaver, F.A.C.S.,** and **Adolph M. Nielsen.** Their topics were as follows: Dr. Burnham, *A Physiologic Treatment of Fractures in the Hand;* Dr. Broadbent, *Intra-Oral and Extra-Oral Muscles: Their Effect on the Alveolar Ridge;* Dr. Greene, *Wringer Injuries;* Drs. Hicken and McAllister, *Accidental Injuries of the Bile Ducts;* Dr. Stevenson, *Early Surgical Treatment of Acute Cholecystitis;* Drs. William F. and Howard P. House, *Stapes Mobilization for Restoration of Hearing;* Dr. McKay, *Refinements in the Surgical Treatment of Fistula-in-Ano;* Drs. Mortensen and Warner, *Clinical Quantitation of Aortic Insufficiency and Aortic Stenosis;* Drs. Mortensen, Cutler, Rumel and Veary, *Management of Coarctation of the Aorta in Infancy;* Dr. Weaver, *The Surgical Treatment of the Diseased or Injured Ureter,* and Dr. Nielsen, *Meconium Peritonitis.*

Dr. Harry Alban, F.A.C.S., F.I.C.S., of Long Beach, California, addressed the assembly on the use of ultrasonation in orthopedic practice; **Dr. Edward S. LaMont,** of Hollywood, on plastic surgery, both functional and cosmetics. **Dr. James H. Saint, F.A.C.S.,** of Santa Barbara, California, spoke on acute volvulus of the cecum, and **Dr. James J. Morrow, F.I.C.S.,** of North Hollywood, on acute pancreatitis. **Dr. Lawrence Braslow,** of Riverside, California, discussed closure of the duodenal stump. A plea for wider use of spinal anesthesia was presented by **Dr. Elliott M. Feigenbaum** of San Francisco.

From the College of Medical Evangelists, Los Angeles, were **Dr. Donald C. Collins, F.A.C.S., F.I.C.S.,** Assistant Professor of Surgery, who spoke on the present status of histoplasmosis in the West; **Dr. H. H. Edelbrock,** Associate Clinical Professor of Urology, with a presentation on hypospadias, and **Dr. S. L. Perzik, F.A.C.S., F.I.C.S.,** Associate Clinical Professor of Surgery, who discussed the place of radical neck dissection in the management of carcinoma of the head and neck.

Chemodissection: A Three-Dimensional Supplement to Surgery of the Breast was the title dealt with by **Drs. Ralph L. Byron Jr., Keith H. Kelly** and **Howard R. Bierman,** all of the City of Hope Medical Center, Duarte, California. Dr. Byron is Chief of Surgery and Director of the Hospital for Tumors and Allied Diseases; Dr. Kelly, Chief of the Section on Oncology, and Dr.

tent le lambeau pédiculé des doigts imbriqués tel qu'Il est utilisé dans le traitement de ce genre de lésion. Ils énumèrent brièvement huit autres techniques en mentionnant leurs indications el contreindications. Ils ont obtenu des résultats des plus satisfaisants par la méthode ci-dessus mentionnée. Tout en reconnaissant à cette technique certains désavantages—parmi lesquels le fait que l'intervention doit être pratiquée en deux temps,—ils soulignent qu'elle procure au malade une fonction digitale aisée. Les auteurs terminent par la description de la technique utilisée.

ZUSAMMENFASSUNG

Die Verfasser heben mit grossem Nachdruck hervor, dass die sogenannten geringfügigen Fingerverletzungen gewöhnlich alles Andere als geringfügig sind und erörtern dann die Behandlung solcher Verletzungen mit dem gestielten Lappen mit gekreuzten Fingern. Sie erwähnen noch kurz acht andere Behandlungsmethoden und gehen auf die Indikationen und Kontraindikationen ein. Sie selbst haben mit dem gestielten Lappen bei gekreuzten Fingern höchst befriedigende Ergebnisse erzielt. Sie geben zu, dass dem Verfahren einige Nachteile anhaften, zu denen die Notwendigkeit einer Operation in zwei Stadien gehört. Andererseits betonen sie, dass die Methode dem Kranken eine leichte und bequeme Funktion der Hand verschafft. Die von ihnen angewandte Technik wird in ihren Einzelheiten beschrieben.

RESUMEN

Después de señalar enfaticamente que las llamadas lesiones menores de los dedos generalmente distan mucho de ser menores, los autores discuten el colgajo con pedículo de dedos cruzados como lo emplearon en el tratamiento de esas lesiones. Enumeran otros ocho métodos de tratamiento brevemente, señalando indicaciones y contraindicaciones. En sus manos el colgajo con pedículo de dedos cruzados ha dado resultados altamente satisfactorios. Ellos admiten que el procedimiento tiene algunas desvenyajas, entre las cuales está el hecho de que la operación requiere dos tiempos, pero enfatizan el hecho de que provee al paciente de función manual fácil y cómoda. Se describe en detalle la técnica por ellos empleada.

RIASSUNTO

Dopo aver chiarito il concetto che i cosidetti traumi minori delle dita tutto sono tranne che minori, gli autori descrivono il lembo peduncolato crociato quale si usa nella cura di tali lesioni.

Elencano brevemente altri otto metodi, con le relative indicazioni e controindicazioni e affermano che il metodo crociato ha dato i migliori risultati. E' bensì vero che presenta alcuni inconvenienti, fra cui il dover essere eseguito in due tempi, ma ripristina nel modo migliore la funzione.

Viene descritta dettagliatamente la tecnica.

The Newer Developments in Orthopedic Surgery 11:30-12:00 a.m.
Edward L. Compere, M.D., F.A.C.S., F.I.C.S. (Hon.), D.A.B., Professor and Chairman, Department of Orthopedic Surgery, Northwestern University Medical School; President-Elect, United States Section, International College of Surgeons; Chairman, International Section, Orthopedic Surgery, International College of Surgeons; Secretary, Qualification and Examination Council, International College of Surgeons, Chicago, Illinois

Symposium
Management of Neck, Shoulder and Arm Pain 12:00-12:30 a.m.
Moderator: **Edward L. Compere**, M.D., F.A.C.S., F.I.C.S. (Hon.), D.A.B., Professor and Chairman, Department of Orthopedic Surgery, Northwestern University Medical School, Chicago, Illinois
Charles Bradford, M.D., Consulting Orthopedic Surgeon, Faulkner, Milton, Mt. Auburn Hospitals and Massachusetts Hospital for Crippled Children, Boston, Massachusetts
Joseph F. Dorsey, M.D., F.A.C.S., F.I.C.S., D.A.B., Instructor Neurosurgery, Tufts University Medical School, Boston, Massachusetts
Samuel S. Hanflig, M.D., D.A.B., Instructor, Orthopedic Surgery, Tufts University Medical School; Instructor in Surgery, Harvard Medical School, Boston, Massachusetts
Luncheon 12:30-2:00 p.m.

Afternoon Session

Presiding: **George Stanley Miles**, M.D., F.A.C.S., F.I.C.S., Somerville, Massachusetts
Secretary: **George Robbins**, M.D., F.I.C.S., Boston, Massachusetts

Hospital Architecture
Hospital in the Round: A New Concept in Design 2:00-2:45 p.m.
Joseph L. Eldredge, A.I.A., Boston, Massachusetts

Question Period 2:45-3:00 p.m.
"What's New" 3:00-3:10 p.m.
M. Leopold Brodny, M.D., F.A.C.S., F.I.C.S., D.A.B., Assistant Professor of Urology, Tufts University Medical School; Regent of Massachusetts, United States Section, International College of Surgeons, Boston, Massachusetts

Urologic Surgery
Arteriovenous Aneurysm of the Kidney 3:10-3:30 p.m.
Hamilton Fontoura, M.D., Rio de Janeiro, Brazil; **Howard A. Hoffman**, M.D., F.A.C.S.,

View of The Balsams. The Switzerland of America, Dixville Notch, New Hampshire, where the Eastern Division of the International College of Surgeons will hold its annual scientific, educational and recreational meeting July 1-6, 1957.

sary to apply a distant graft for a sizable defect. The graft for this purpose is the full thickness skin graft, and the donor sites of choice are the supraclavicular area and the postauricular region. When the excision is done for lesions scattered over the entire dorsum of the nose and a full thickness graft seems inadvisable because of the large area to be covered, a split thickness skin graft removed from the thigh or the abdominal wall should be chosen. In dealing with smaller lesions on the lateral aspect of the nose it is possible to make use of local flaps to cover the resulting defects. These flaps may be based either inferiorly (when the bulk of the tissue comes from the region of the nose and the lower eyelid) or superiorly (when the tissue comes from the nasolabial or the labiobuccal fold). For lesions at the margin of the ala, where the full thickness is involved or where, because of the inflammatory reaction associated with the lesion, it is impossible to decide upon a compromise, the entire thickness of the ala should be removed. The resulting defect in this condition is adequately managed by the use of a composite graft. Such a graft is usually taken from the base of the helix of the ear and includes a double layer of skin and subcutaneous tissue with an intervening leaflet of cartilage. A graft of satisfactory size can produce a most favorable result. The secondary defect in the ear is easily closed by direct suture, and the end result is not particularly conspicuous. For deeper-seated lesions of the nose that involve bone and perhaps underlying mucous membrane, a full thickness excision is required, and in the reconstruction of such a defect a distant flap, such as a forehead flap, is required. Of course, this enters into the field of multiple-stage operations, but even though the end result is somewhat delayed it can be quite pleasing. The secondary defect in the region of the forehead is covered immediately with a split thickness skin graft and, after division, the unused portion of flap is returned to the forehead.

Small lesions of the eyelids, particularly of the upper lid, allow wide excision with direct closure, for an abundance of skin from the upper eyelid is always available for such a procedure. When the lesion is near the palpebral border, a long horizontal incision can be made, the skin of the upper lid being advanced, for a satisfactory result. Carcinoma of the lower eyelid, which tends to involve a moderate proportion of the total length of the lid, can best be treated by a wide V type of excision with advancement of a skin flap from the cheek. In this procedure, the conjunctiva from the lateral aspect of the lid and the conjunctival sac is advanced medially with the skin flap. On occasion it is necessary to undermine the conjunctiva extensively and even to borrow some of the bulbar conjunctiva in the reconstruction.

A certain number of lesions appear to involve both nose and eyelid. These are the ones commonly present near the inner canthus. With these it is usually routine to take as much skin and subcutaneous tissue as is deemed necessary from either the upper or the lower lid, or both, and leave, if possible, the tarsal plate or at least the conjunctiva. The remaining portions of the lids are sutured together, and the entire defect is covered with a supraclavicular full thickness skin graft. If the reconstruction is extensive enough to impair vision, the graft and conjunctiva can be divided and sutured to reconstitute the medial portions of the upper and lower eyelids after three or four months have passed.

Epitheliomas of the ear usually permit wide excision, for here one is dealing with an organ which, at times, appears to be completely expendable. In a case of extensive carcinoma, great portions of the ear,

Woman's Auxiliary

PRESIDENT'S MESSAGE

Getting Acquainted

Mrs. Clifton L. Dance

Our page in the March-April *Bulletin* was planned to acquaint the members with their officers and various committees. In this issue I should like to introduce your Regional Vice-Presidents.

In a sense, the Regional Vice-President in your section of the country is your particular representative, and she can best serve her Section and you if you make yourself known to her. For instance, permit me to quote from an excellent report made by **Mrs. V. T. DeVault** on the Regional Meeting held at the famous Greenbrier Hotel in White Sulphur Springs, West Virginia. Mrs. DeVault is one of the Regional Vice-Presidents for the Mid-Atlantic Section, and she represented the Woman's Auxiliary at this meeting. She writes:

"Surgeons' wives from the Gulf of Mexico to the Great Lakes and from the Atlantic Ocean to west of the Mississippi River came together, renewed old friendships and made new ones. The General Chairman for the Woman's Auxiliary was **Mrs. Elbyrne Gill**, who, with her co-chairmen, **Miss Jean Gill, Mrs. Francis McGovern, Mrs. Charles Easley, Jr., Mrs. J. G. Jantz, Mrs. Andrew F. Giesen, Mrs. Edgar W. Weaver** and **Mrs. George Bourne** welcomed the ladies who attended (about 100) and arranged for them to enjoy the events that had been planned.

"A tour through this fabulous hotel delighted both the homemakers and the party-givers among us; from the stainless steel kitchens, so efficiently run, to the wing where President Eisenhower met the Canadian Prime Minister. For those who liked bridge and canasta, events were arranged with prizes for each table. Many availed themselves of the curative baths and massages, while the out-of-doors ladies had walks, golf and auto trips to nearby points of interest. The shopper is always with us, and the lovely Greenbrier shops were a delight. Some of our more studious women attended the doctors' lectures. The Auxiliary will be happy to learn that we have gained new members from this fine group."

We are most grateful to Mrs. DeVault, for her report shows that the Regional meetings are a golden opportunity for surgeons to combine a few days of change and rest with the continuous study imposed by their dedicated profession. For our women, these meetings are also far more than a vacation at a delightful hostelry. We meet other women toward whom we feel a collective kinship, a warmth and satisfaction that enrich these particular holidays, because we know that our husbands also find a rewarding satisfaction in these "get-togethers" and discussions with their colleagues.

The Regional Meetings bring the College to you, wherever you are located. There are no "remote Sections." The State Regents of the College have been planning these meetings in such charming and historically interesting places that the location itself becomes an added attraction. By the time this article sees print, the next Regional Meeting (April 7-10, 1957) of the Great Lakes Division and the Indiana State Section will have taken place. **Dr. Andrew Bowen**, Regent for Kentucky, has scheduled this meeting at another magnificent hotel, the French Lick Sheraton, French Lick, Indiana. alifornia State Chapter will h at the major portion of the tongue must be excised is likewise acceptable and, on occasion, is the method of choice. Ordinary or average lesions of the tongue are perhaps better treated by cautery excision plus the implantation of radon seeds and a prophylactic dissection of the neck. Lesions of the buccal mucous membrane can sometimes be excised and inlay skin grafts inserted. For elderly persons, whose tissues are relaxed, direct closure is the method of choice. When the mandible is involved, a combined radical resection of the neck and jaw must be performed; in such cases I use a metal rod to reconstitute the removed section, so that the remaining teeth may have normal occlusion and the facial contours be maintained.

SUMMARY

The author briefly reviews various plastic surgical procedures to reconstruct defects of the head and neck after excision of malignant lesions in these areas. These include (1) direct closure; (2) extensive undermining with direct closure; (3) the use of local flaps; (4) the use of split thickness skin grafts; (5) the use of full thickness skin grafts; (6) the use of distant flaps; (7) the use of composite grafts, and (8) metallic reconstruction of the mandible after radical resection of the neck and jaw. These are merely adjuncts to the author's stated aim in the treatment of malignant lesions, namely, complete removal of all diseased tissue and adequate reconstruction of resulting defects, so that the patient may return to his normal place in society.

RÉSUMÉ

L'auteur passe brièvement en revue les différentes techniques chirurgicales de reconstruction plastique de la tête et du cou après excision de lésions malignes. Celles-ci comprennent: 1) la suture directe; 2) l'excision large en profondeur avec suture directe; 3) l'utilisation de lambeaux locaux; 4) l'utilisation de greffes cutanées dédoublées; 5) l'utilisation de greffes cutanées totales; 6) l'utilisation de lambeaux éloignés; 7) l'utilisation de greffes mixtes, et 8) la reconstruction métallique du corps de la mandibule après résection radicale du cou et des mâchoires. Ces méthodes ne sont que des auxiliares dans le but à atteindre lors du traitement des lésions malignes, qui est l'excision totale de tous les tissus pathologiques, suivie d'une reconstruction satisfaisante de sorte que le malade puisse retrouver sa place normale dans la société.

RESUMEN

El autor revisa brevemente varios procedimientos plásticos quirúrgicos para reconstruir defectos de la cabeza y el cuello después de la excisión de lesiones malignas en esas áreas. Estas incluyen: (1) cierre directo; (2) movilización excesiva de colgajos con cierre directo; (3) el uso de colgajos locales; (4) el uso de injertos de piel de grosor medio (5) el uso de injertos de piel de grosor total; (6) el uso de colgajos distantes; (7) el uso de injertos complejos y (8) reconstrucción de la mandíbula con partes metálicas después de resección radial del cuello y maxilares. Estos son procedimientos puramento adjuntos a los mencionados por el autor en el tratamiento de lesiones, malignas, en otras palabras, extirpación completa de tejido enfermo y reconstrucción adecuada de los defectos resultantes, para que el paciente pueda retornar a su lugar normal en la sociedad.

RIASSUNTO

L'autore tratta brevemente dei vari metodi plastici per la riparazione delle

the Esophagus

Dr. Barbin, Nantes: *Permanent Intubation in Inoperable Carcinoma of the Esophagus*

Dr. Bouvier, Reims: *"Good" and "Bad" Gastrectomies*

At 12:30, luncheon will be served in the Pommery Caves or ad libitum.

At 2 p.m. **Dr. Jerome J. Moses,** of Chicago, will present *Problems in Hepatobiliary Disorders.*

After another visit to the exhibits at 4 p.m., followed at 6 p.m. by a visit to the Saint-Remi Basilica and the Cathedral, dinner will be served at the Pommery Caves at 8:30.

For Sunday, May 26, three different programs have been arranged, according to the desires of the participants.

1. Religious Services
    At the Cathedral: 8:30, 10, 11:45
    At the Temple: 10:30
2. 9-11 a.m.: Scientific Papers
    Visit to the Regional Center of Malignancies, conducted by **Prof. LeFévre,** Director
3. Visit to the Center of Thoracic Surgery at Châlons; scientific session by **Dr. Monod**

Transportation will be provided.

Other Communications

Endoscopic Films

Prof. Raymond Darget, Bordeaux: *Radium Therapy of Malignant Tumors of the Urinary Bladder*
1. *Tumors Limited to the Bladder*
2. *Infiltrating Tumors*

Prof. DeCoulx, Lille: *Fractures of the Calcaneus*

Surgery of the Genitourinary Organs

Prof. Darget and Dr. De Castelmur, Bordeaux: *An Experimental Study in Ureteral Plastics by Means of Arterial Homografts*

Dr. LeCocq, Clermont-Ferrand: *Evaluation of the Danger of Hemorrhage and Thrombo-Embolisms During Prostatectomy*

Dr. Van Keerbergen, Brussels: *Discussion of Ureteral Plastics*

Dr. Dufour, Paris: *Ureteral Plastics Endocrinology, Biology, Cancerology*

Dr. Brenier: *Problems in the Surgery of Malignant Disease*

Prof. Darget and Dr. Lämarche, Bordeaux: *Irradiation of the Hilum of the Prostate with Radioactive Isotopes in Cancer of the Prostate*

Prof. Despons, Bordeaux, and **Dr. R. Gauducheau,** Nantes: *Lympho-Epithelioma of the Tonsil (Projections)*

Medical films will be shown without interruption during the congress, in a special room.

NETHERLANDS SECTION

The first refresher course in Anesthesiology offered in the Netherlands was held in January 1957 at Boerhaave-kwartier, Leyden, under the direction of **Dr. L. A. Boere,** F.I.C.S. A comprehensive program of instruction was given, dealing with anesthesiology in all its main aspects: its use in cardiac surgery, its relation to hypotension in general and plastic surgery, its effect upon the respiratory tract. Hypothermia was fully discussed; its induction, its biochemical aspects, its postoperative phase and its physiologic effect.

On the final day of the course a number of excellent clinical and laboratory demonstrations were given in the fields of anatomy, physiology, pathology, hemodynamics and defibrillation.

Assisting Dr. Boere as leaders of the course were **Prof. Dr. A. G. Brom, Prof. Dr. J. Mulder** and **Prof. Dr. H. A. Snellen.** Participants in the scientific program were **Dr. Sheila Anderson** (London), **Dr. L. A. Boeré, Dr. F. H. Bonjer, Dr. B. Bink, Prof. Dr. A. G. Brom, Ir. J. Bekink** (Arnhem), **Prof. Dr. R. Brinkman** (Groningen), **Prof. Dr. J. Dankmeijer, Mej. A. Dekker, W. Dekker, Dr. G. E. H. Enderby** (London), **Dr. W. R. O. Goslings, Dr. J. F. Ph. Hers, H. Labadie** (Den Haag), **Dr. A. E. Loeliger, Prof. Dr. J. Mulder, Dr. Muller Fz., Dr. J. Niekerk** (Amsterdam), **Prof. Dr. N. G. M. Orie** (Groningen), **Dr. J. D. Robertson** (Edinburgh), **Prof. Dr. H. A. Snellen, H. G. Verdonk, J. Th. Ch. Vonk** and **Dr. Voorhoeve** (Rotterdam).

Surgical Treatment of the Male Genitalia

With Special Reference to the Use of Periosteal Bone Graft in Constructing the Penis

MUNAWAR ALI, M.B., F.R.C.S. (Ed.), F.I.C.S.*

KARACHI, PAKISTAN

RECONSTRUCTIVE surgical treatment of the male genitalia is a fascinating but rather difficult field, demanding the best that a plastic surgeon can offer, both in planning and in proper execution.

A satisfactory reconstruction of the penis was first reported in 1936 by Bogoraz,[1] who after several plastic procedures restored the major portion of a penis lost in an accident. Others who contributed to this subject are Blum[2] (1938), Frumkin[3] (1943), Bergman and his co-workers[4] (1948), Paletta,[5] Goodwin and others[6] (1952), Chapell[7] (1953) and Farina and his associates[8] (1954). Most of these authors have used an abdominal tubed flap or scrotal tissue to construct the phallus and a cartilage or acrylic transplant to stiffen it.

Although cartilage gives a good immediate result, after some months it curves upon itself and no longer serves its purpose as a baculum. Some patients do not tolerate acrylic splints.[6]

I have used periosteal bone graft for splinting the newly constructed penis and also in certain cases of impotence. The results have been encouraging. Further, bone is a physiologic component of the penis in some mammals, e. g., the dog, the bear and the baboon. In animals the os penis serves to produce a rapidly erectile state of the organ and assists in copulation.[9]

Construction of the Penis (Phalloplasty).—I had the opportunity to construct a penis of good appearance and adequate function in a pseudohermaphroditic patient with hypospadias by a method somewhat different from those described in the literature, giving gratification to both the patient and his partner during coitus and not hurting either.

REPORT OF CASE

Mrs. D. Khatoon (now Mr. D. Khan, a farmer from Larkana, Sind, Pakistan) was admitted to Surgical Unit No. 1, Civil Hospital, Karachi, on Aug. 4, 1953.

The patient had been married for more than twelve years, but had never menstruated and never conceived. As a result of increasingly violent quarrels, the District Magistrate had separated her from her husband. The patient cropped her hair, discarded the female clothes and started a small grocer's shop. "She" wanted to look like a man in order to get along with "her" changed occupation. For this purpose "she" came to the hospital with a request for the construction of a moustache.

On examination and investigation she was found to be a pseudo-hermaphrodite. Two small nodules were present in the labia majora. The labia minora were rather ill defined. The vagina comfortably admitted a large speculum. The urethra was situated at the anterior wall, a short distance from the vaginal opening. The clitoris was small (Fig. 1).

The right nodule, on histologic examination, proved to be an undeveloped testis.

With intensive hormonal therapy, the labial folds, which were actually the testicular folds, grew into pouches, and the appearance of the genitalia assumed the form of pseudohermaph-

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General Surgery

Practical Observations of the Biliary Tract with Operative Cholangiography and Cholografin

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CLEVELAND, OHIO

THIS article is offered in emphasis of what can be accomplished with operative cholangiographic study and the intravenous Cholografin.

Operative cholangiographic investigation is invaluable not only in the detection of calculi but in differentiation between pancreatitis and neoplasm, non-calculus obstruction, such as fibrosis of the sphincter of Oddi, and avoidance of unnecessary surgical intervention. Further, it permits a sound anatomic orientation in secondary operations.

In this technic, as in all new procedures, time and patience are needed to become expert. In addition, there is need for teamwork between the surgeon, the roentgenologist, the technician, the surgical nurse and the anesthesist. Just as more than one or two gastrectomies are needed to qualify a surgeon, so a procedure should not be judged until it has been tried repeatedly to eliminate shortcomings. In most instances these shortcomings are due to lack of experience. The extra time re-

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Fifth Stage. A broad strip of fascia lata about 20 cm. long was obtained from the patient's thigh. The lower end of it was split to encircle the proximal part of the bone graft and was sutured in place. A few stitches were also applied to anchor the strip proximal to this slit to the periosteum.

The remaining strip was passed through a subcutaneous tunnel in the midline, to come out of a transverse slit in the rectus sheath and be anchored to it.

Through another transverse slit in the rectus sheath, the fascia lata was buried deep to it and anchored to the muscle. The fascia lata transplant acts as a suspensory ligament and elevator muscle to the artificial os penis (Fig. 2*C*).

Sixth Stage. The pedicle was separated from the hand. A meatal dimple was created by making a small longitudinal midline slit in the skin of the severed flap, dissecting a small quantity of the fat around the slit and drawing the lips of the incisions inward with a stitch of catgut on either side. The flap was turned over the raw lower end of the pedicle graft and sutured onto the ventral surface, forming the rounded distal end and beginning the construction of the glans for the new phallus. The linear scar on the undersurface of the pedicle now lay between the triangular flap of new glans and the symphysial flap at the root of the new phallus (*f*, Fig. 4). Subsequent contraction of the scar, therefore, did not cause any bending of the organ.

Seventh Stage. About two weeks later a circular incision was made, running downward and forward at the site of the proposed coronoglandis sulcus, a small skin flap being raised on the distal end of the pedicle (*c*, Fig. 4). The flap was 4 mm. broad on the dorsal surface but tapered toward the midline ventrally, (The intact bridge of skin on the ventral surface is an additional safeguard in maintaining good vascular supply to the distal end.) From the exposed raw tapering surface a little quantity of fat was snipped out dorsally and laterally without interfering with the vascular supply of the distal end (*d*, Fig. 4). A few telescoping mattress sutures were applied to narrow the exposed raw surface. The skin flap was turned back, folded and sutured to the proximal cut edge of the wound.

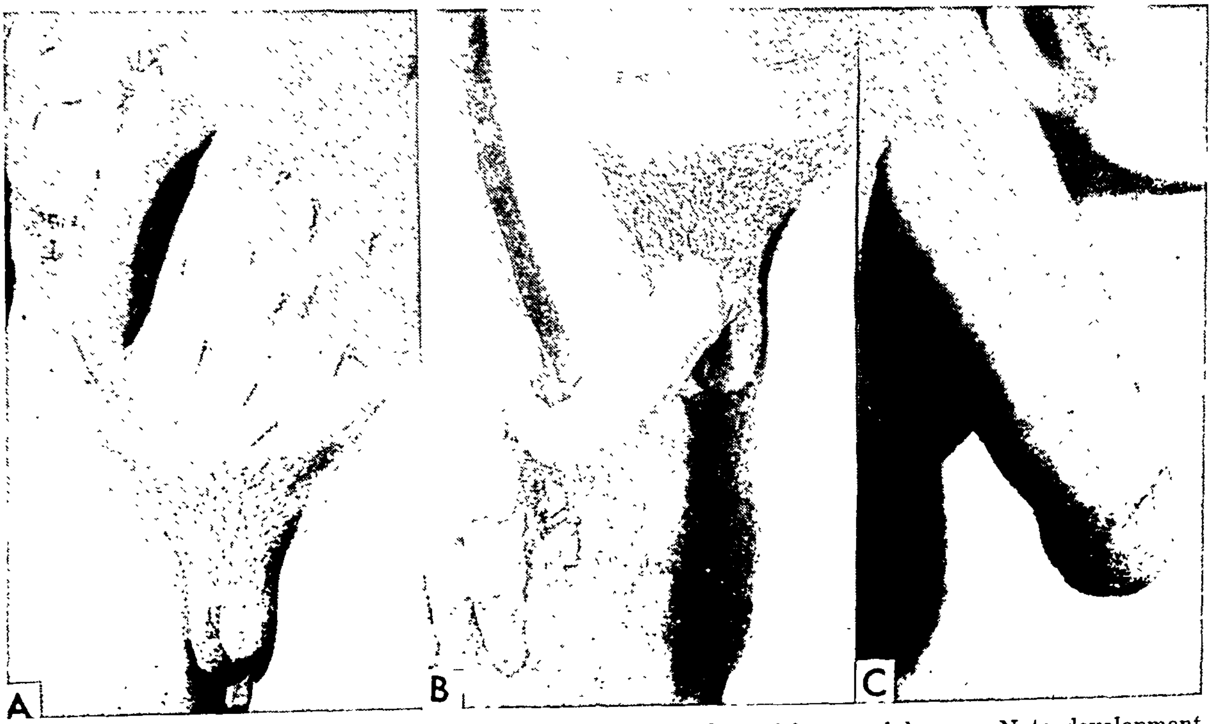

Fig. 2.—*A*, newly constructed thick tubed pedicle with relief nicks on abdomen. Note development of scrotal folds and absence of penis. *B*, abdominal tubed pedicle transferred to hand and later attached to subsymphysial region. Through two dorsal stab incisions, tunnel was made in tubed pedicle and tibial bone graft with periosteum implanted. *C*, reconstructed penis being elevated by voluntary contraction of rectus abdominis muscle, through the newly constructed elevator apparatus. Organ comes into normal position of function by erection of penile peg to which new os penis is attached.

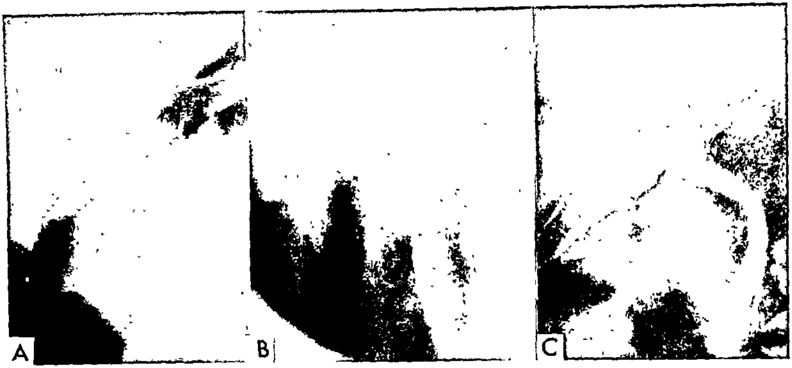

Fig. 3.—Calculi of common duct (Cholografin). *A*, distal portion of duct obscured by opaque medium in duodenum. Diameter of common duct is normal. *B*, laminogram showing several distinct calculi in distal portion of duct. *C*, operative cholangiogram confirming presence of calculi. Note difference here in diameter of common duct from appearance in intravenous and operative studies.

graphic effect is *ipso facto* an indication of damage to the liver. This is not true. The pyelographic appearance is encountered fairly frequently with no clinical or laboratory evidence of hepatic disease.

Side reactions to Cholografin are less than those observed during an intravenous urographic examination. Reactions can be controlled by a regular slow rate of injection with a stop-watch used as control. The rate should not exceed 5 cc. per minute; if 40 cc. is used, the injection should not be prolonged beyond eight to ten minutes. Of 333 patients examined with the double dose (40 cc.), 30 complained of mild nausea, 21 of nausea and vomiting and 13 of urticaria. Two hundred of this group had undergone cholecystectomy.

Cholografin is demonstrable in the biliary radicles within ten to fifteen minutes after its injection. Obviously, it is impractical to attempt routine visualization of the ductal system and gallbladder every 10 to 15 minutes for two or three hours.

It should be determined in advance, therefore, whether the emphasis is to be placed on the intrahepatic and common ducts, which are visible with fifteen minutes, with a maximum concentration in the common duct at thirty to forty-five minutes, or on the gallbladder, which appears as an area of thin veil-like density at forty-five minutes with maximum concentration at two to two and one-half hours.

Some pitfalls encountered in interpretation with Cholografin are: (1) stratification of the gallbladder due to failure of bile and dye to mix, with the result that bizarre shadows may be mistakenly interpreted as calculi; (2) air bubbles in the biliary tract after sphincterotomy, misinterpreted as stones; (3) ability of a gallbladder to function, after sphincterotomy; (4) Cholografin in the duodenal bulb or the descending portion of the duodenum, mistaken for a cystic stump; (5) calculi in the distal region of the common duct, obscured by rapid emptying of Cholografin into the duodenum (Fig. 3), and, (6) persistence of

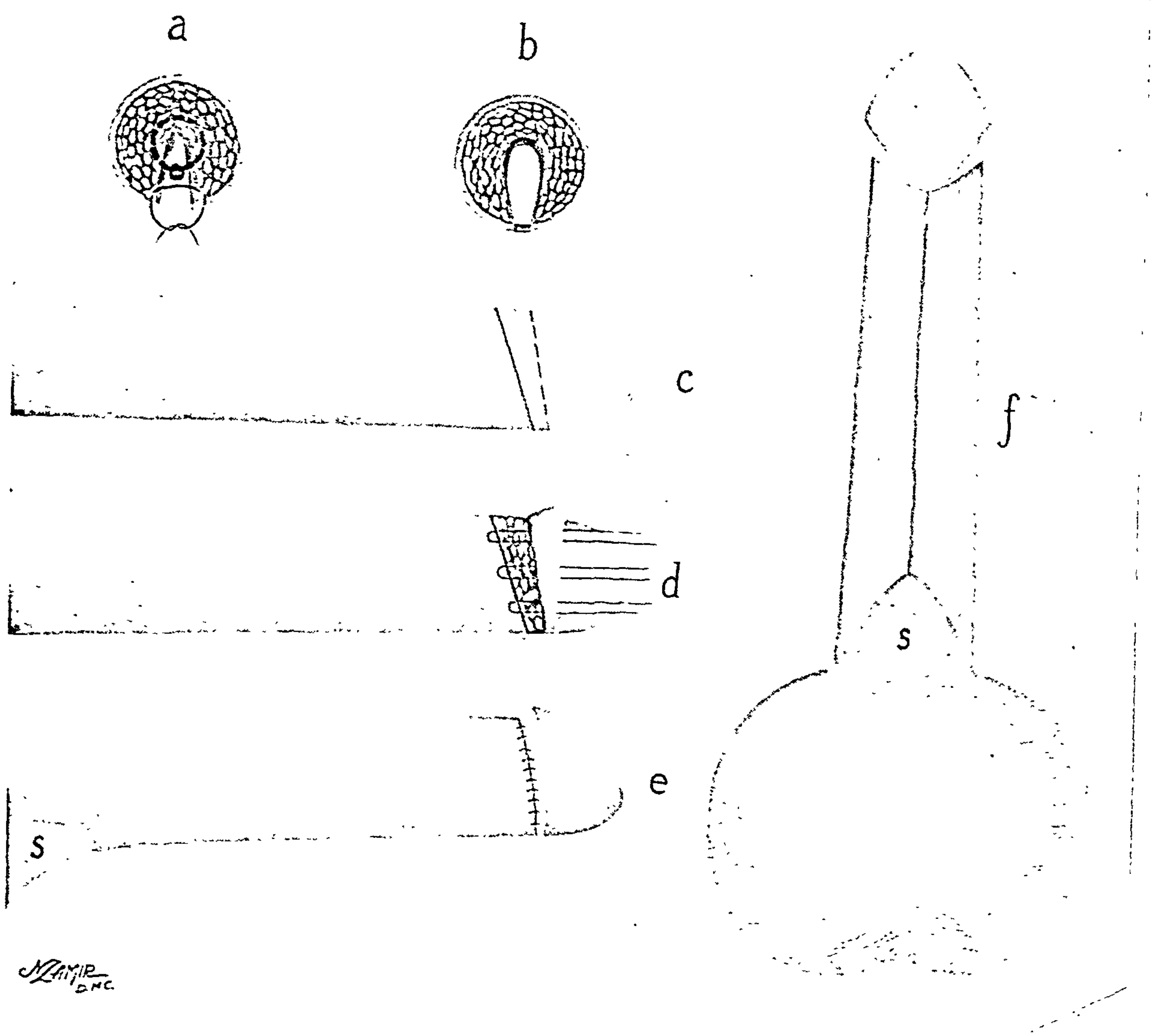

Fig. 4.—Cross section of tubed pedicle (*a*) showing one of thick buried catgut stitches used in approximating inner raw fatty surface during tubing of flap; also one of interrupted cotton stitch sutures approximating edges of skin. A ridge of dense fibrous tissue (*b*) is produced by tissue reaction to buried catgut, giving some degree of stiffness to pedicle. Incision for raising tiny flap on distal end of pedicle is shown in *C*. Shadow line denotes extent of dissection. In *d*, note that from exposed raw tapering surface a little fat is snipped out dorsally and laterally without interfering with vascular supply of distal part. A few telescoping mattress sutures are applied to narrow exposed raw surface. Skin flap is turned back (*c*), folded and sutured to proximal cut edge of wound. A slightly elevated ridge is produced on dorsal aspect which gradually disappears towards midline on ventral surface. Ventral aspect of the reconstructed penis (*f*) shows that contraction of the midline scar does not produce bending of new penis, owing to resilient scrotal flap *S*.

in both the crura of the stump to obtain a stiff organ for good function.

Although the patients as a rule were easily pleased, having already reconciled themselves to the unfortunate results of damage or injury, I was still dissatisfied

Se describe el diagnóstico colangiográfico de malfuncionamiento del esfínter de Oddi (espasmo ó fibrosis) y pancreatitis.

Se enfatiza el valor prático de un examen con cholografin, especialmente después de colecistectomía.

Se discute en detalle el diámetro del cloédoco normal y el del colédoco des pués de la operación.

ZUSAMMENFASSUNG

Der Bedarf für operative cholangiographische Untersuchungen und deren praktische routinemässige Ausführung werden erörtert.

Praktisch wichtig Punkte in der Deutung der Röntgenbilder werden hervorgehoben.

Die cholangiographische Diagnose der fehlerhaften Funktion des Sphincter Oddi (von Krampfzuständen bis zur Fibrose) und der Bauchspeicheldrüsenentzündung wird umrissen.

Der Wert der Untersuchung mit Cholografin besonders nach Gallenblasenresektion wird betont.

Auf die Erörterung des Durchmessers des normalen Choledochus und desselben nach Operation wird besonders eingegangen.

SUMARIO

Discute a necessidade a execução prática da colangiografia operatória. Os aspectos praticos de interpretação radiografica são ressaltados. O diagnóstico colangiografico da disfunção do esfincter de Oddi (do espasmo à fibrose) e a pancreatite são motivo de explanação. O A. salienta o valor pratico da Colangiografia com Cholografin especialmente apos a colecistectomia. O diametro do coledoco antes e depois da operação merecem comentarios especiais.

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I have found that, with some natures, it would pain and perplex their moral anatomy to move direct to an object. Like snakes, they seem formed to take pleasure in indirect motion; with them the true line of moral beauty is a curve.

—*Vauvenargues*

In cases of total loss, thigh flaps are considered suitable for reconstruction. Transplantation of the testes into the thigh is undesirable cosmetically and also because it subjects them to unnecessary trauma.

Surgical Treatment of the Impotent.—Encouraged by the good results of bone grafting obtained in the field of constructive surgical operations on the penis, I have extended its use in certain selected cases of advanced impotency. The proverbial stiffness is given to the penis, and its functional value is enhanced.

SUMMARY

A new technic of phalloplasty is described. A bone graft with larger periosteum from the tibia is considered an ideal physiologic baculum.

Other reparative and reconstructive problems of the region are discussed.

RÉSUMÉ

Une nouvelle technique de phalloplastie est présentée.

La greffe osseuse avec un périoste plus étendu du tibia est considérée comme un baculum physiologique idéal.

D'autres problèmes de chirurgie réparatrice et reconstructive de cette région sont discutés.

RIASSUNTO

Viene descritta una nuova tecnica per la falloplastica. Il trapianto ideale viene considerato quello osseo-periosteo prelevato dalla tibia.

Vengono discussi altri problemi analoghi di ricostruzione.

RESUMEN

Se describe una nueva técnica de faloplastía.

El injerto de hueso con periósteo grande de la tibia se considera como un báculo fisiológico ideal.

Se discuten otros problemas de reparación y reconstrucción de la región.

ZUSAMMENFASSUNG

Es wird eine neue Technik der Penisplastik beschrieben.

Eine Knochentransplantat mit reichlich Periost vom Schienbein wird als ideales physiologisches Glied angesehen.

Andere Wiederherstellungsprobleme dieser Körpergegend werden erörtert.

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orchiectomy and not to depend on biopsy examination, for fear of spreading cancer cells if this were a malignant tumor. The testicle was removed, with care taken to ligate the cord high up in the inguinal canal. The postoperative course was uneventful.

When examined on Dec. 28, 1956, the patient was in good health; there had been no recurrence.

The pathologic report by Dr. Nathan Rudo revealed the following:

Gross: The specimen consisted of the left testicle, epididymis and part of the spermatic cord enclosed in the tunica vaginalis. It weighed 35 Gm. and measured 5 by 4 by 3 cm. Within the superior portion of the testicle was a firm nodule 1.8 cm. in diameter. On section, the nodule consisted of white laminated caseous material with a peripheral bounding capsule attached at one area to the tunica albuginea. The adjacent testicular tissue appeared normal, and no abnormalities were seen in the rest of the specimen (Fig. 1).

Microscopic: The capsule of the nodule was composed of a thin layer of stratified squamous epithelium resting on a base of fibrous connective tissue. The epithelial cells were flattened and the superficial cells contain keratohyalin granules. Laminated keratin masses rested on the epithelium in the form of thin wavy sheeets. No accessory skin structures or teratomatous elements such as cartilage, teeth or glands were found. The testicular tubules showed a moderate degree of spermatogenic activity. There was an increased number of interstitial cells (Fig. 2).

The diagnosis was epidermoid inclusion cyst of the testicle.

Careful routine examination of all men entering the Armed Services, since World War II, has revealed that benign cyst of the testicle may not be quite so rare as formerly believed. Though they may be painful, many of these cysts are asymptomatic and in private practice are usually detected during routine examination or in cases of trauma or acute inflammation of the testicle. Cystic disease may be congenital or may occur after birth. Albert, Frater, and others found a number of these cysts while performing routine autopsies.

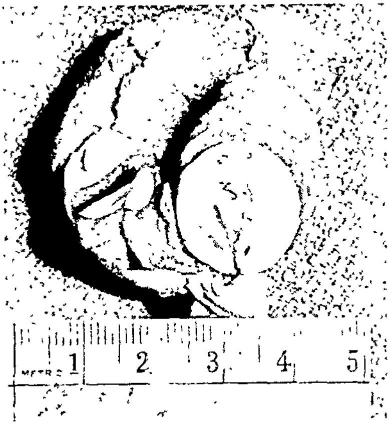

Fig. 1.—Sagittal section of testicle, showing epidermoid inclusion cyst arising from inner surface of its substance, close to tunica albuginea (×1.2).

When a differential diagnosis is being made, the presence of a painless, slow-growing, firm, round or ovoid mass in the testicle should lead the physician to suspect benign cyst. The neoplastic tumor grows much faster than the latter type. It should not be confused with encysted hydrocele of the body of the testis, which usually transmits light. Cysts of the tunica albuginea are apt to be smaller, may be multiple, and are situated nearer the periphery of the testis, completely invested with the tunica albuginea. Microscopic study is necessary in order to distinguish these from simple cysts of the substance of the testis.

Gonadotrophic hormone determination is valuable in the diagnosis of many types of neoplastic growths, such as adenocarcinoma, chorio-epithelioma, and certain kinds of seminoma, especially when there is metastasis. However, it is of no use in cystic disease of the testicle, as there is no increase in gonadotrophic hormones nor in certain types of malignant neoplasm, i.e., seminoma without lymphoid stroma (Stevens).

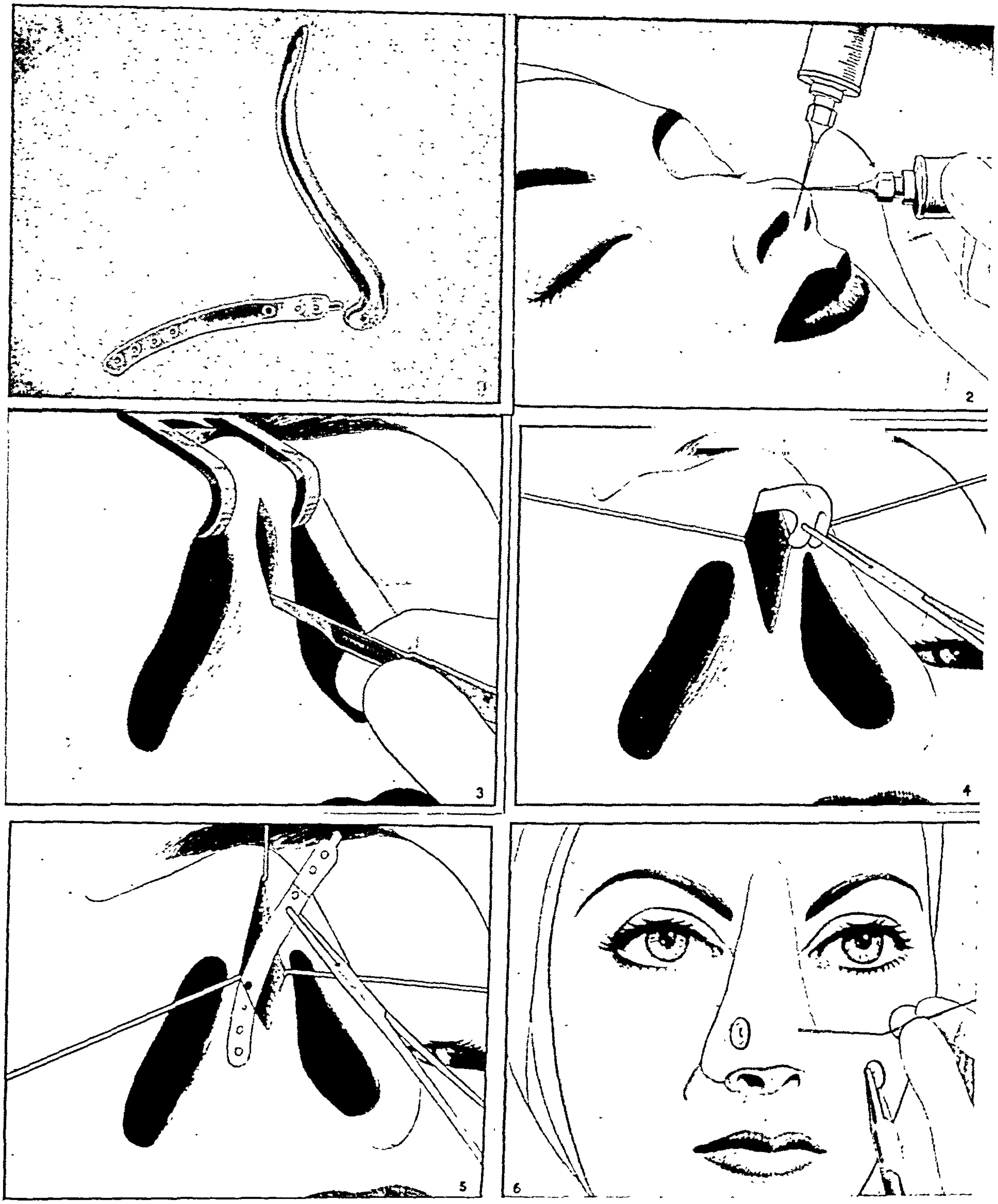

Fig. 1.—Operative technic (see text).

The columellar portion is very thin. It carries a piece of vitallium in its anterior end, which is articulated with the corresponding end of the dorsal portion. I have acquired the habit of making this section sufficiently long to be cut at the moment

RÉSUMÉ

Il s'agit d'un cas asymptomatique de kyste épidermoide bénin du testicule gauche chez un homme de 25 ans, guéri par orchiectomie.

Il ressort de recherches systématiques récentes que le kyste testiculaire bénin est moins rare qu'on le pense (5% de toutes les tumeurs des testicules). Il faut y songer lorsqu'on se trouve en présence d'une masse tumorale ferme, à croissance lente.

Traitement: orchiectomie; dans des cas exceptionnel on pourra se contenter d'une excision locale.

Les tumeurs des testicules devraient toujours être suspectées de malignité. L'orchiectomie est indiquée lorsqu'il y a le moindre doute, car il est préférable de pratiquer l'ablation d'un testicule dissémination de cellules malignes.

Nous en sommes encore aux hypothéses quant à l'origine des kystes bènins des testicules; il est probable que divers facteurs étiologiques entrent en ligne de compte.

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The discovery that man can be scientifically manipulated, and that governments can turn large masses this way or that as they choose, is one of the causes of our misfortunes. There is as much difference between a collection of mentally free citizens and a community molded by modern methods of propaganda as there is between a heap of raw materials and a battleship. Education, which was at first made universal in order that all might be able to read and write, has been found capable of serving quite other purposes.

Fig. 2.—Roentgenograms showing prosthesis in position.

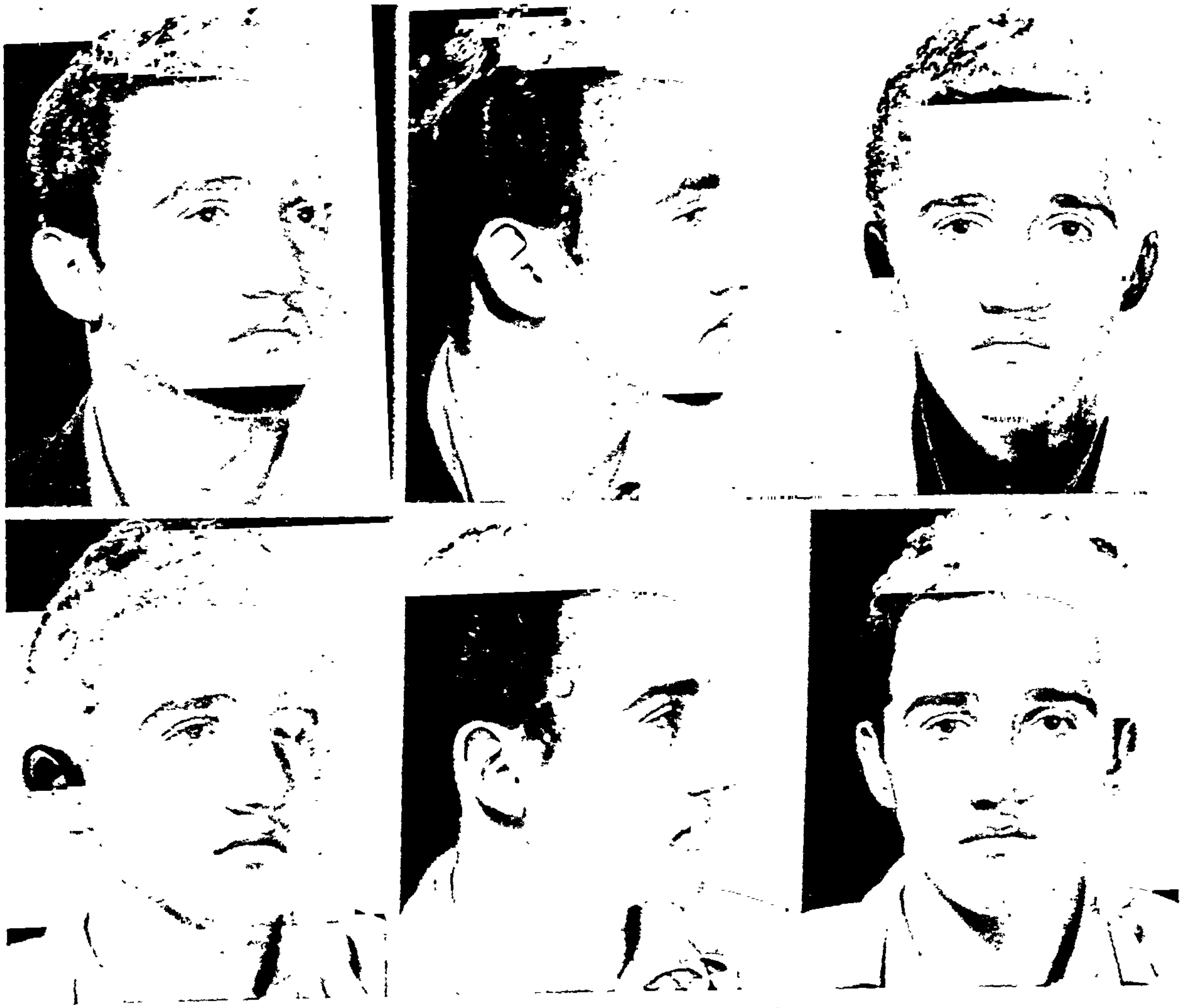
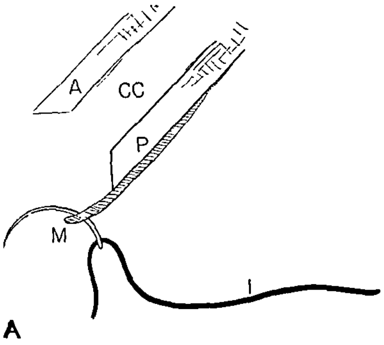
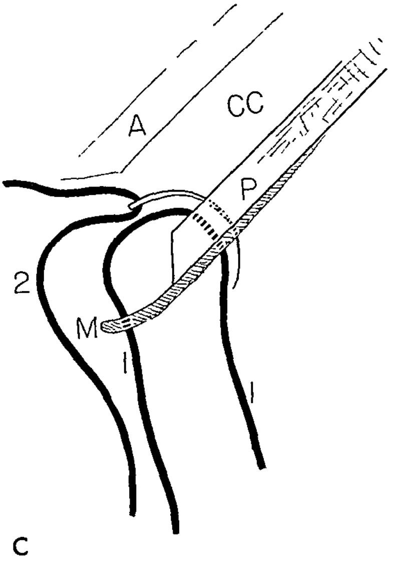


Fig. 3.—Results in case of male patient.





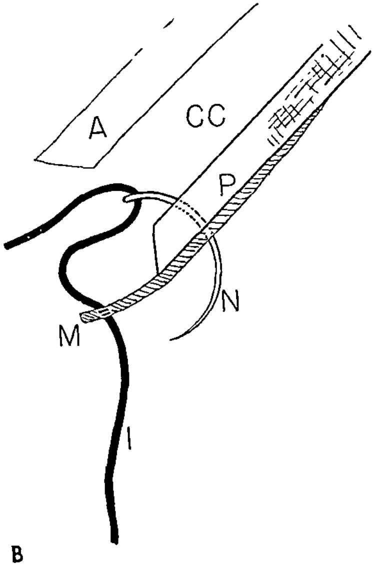


Fig. 3.—*A, first posterior twin stitch (first step).* The needle with ligature *1* is passed first *through the flap (M) in the midline,* not too close to its edge, from the outside to the inside. *B, the first posterior twin stitch (second step).* Posterior cervical wall (*P*) is passed by the needle (*N*) in the midline from the cervical canal (*CC*) to the outside. *C, second posterior twin stitch.* Needle with ligature *2* is passed only through the posterior cervical wall (*P*), about 0.5 cm. above ligature *1*, from the cervical canal (*CC*) to the outside. Ligature 2 is not passed through flap (*M*).

flap of the mucosa.

The posterior set is tied first. The ends of the ligatures *at the flap* are united by a square knot in the air.[4] A hemostat or a knotholder[3] is applied closely behind the knot, and the excess of the ligature is cut off (Fig. 4*A*). The hemostat acts here as a barrier and prevents the knot from being pulled through one of the stitch canals. By traction on the other ends of the twin ligatures, the flap of mucosa is pulled into the cervical canal (Fig. 4*A*). The assistant supports this maneuver with the previously attached hemostat behind the knot. Thus the tension is considerably reduced and the danger of alar cartilages, with consequent improvement of the respiratory function.

The first of these patients was operated on three years prior to the time of writing.

SUMMARY

The author describes a two-part acrylic structure to restore the shape in cases of flat nose due to destruction or morphologic collapse.

The two sections of this structure are introduced through a small incision in the columella. The dorsal portion is attached to the nasal spine.

With the use of this device the author has succeeded in giving the nose the necessary projection for a good esthetic result and respiratory function. The incision is occluded in two layers.

Tolerance of the structure has been 100 per cent satisfactory.

RIASSUNTO

L'Autore descrive una protesi acrilica in due pezzi da usare per ridare la forma al naso in caso di naso piatto da distruzione delle ossa.

I due pezzi vengono introdotti attraverso una piccola incisione nella columella. La loro parte dorsale viene fissata alla spina nasale.

Con l'uso di tale procedimento l'Autore ha ottenuto di poter dare al naso la necessaria sporgenza per un buon risultato estetico e per una buona funzione respiratoria. La incisione viene chiusa in due strati.

Nel 100% dei casi la protesi è stata tollerata in maniera soddisfacente.

ZUSAMMENFASSUNG

Der Verfasser beschreibt ein aus zwei Teilen bestehendes Gebilde aus synthetischem Kunststoff (Akryl), das er zur Wiederherstellung der Form der Nase benutzt, wo es entweder durch Zerstörungsprozesse oder durch Zusammenbruch zu einer Abflachung des Organs gekommen ist.

Beide Teile des Gebildes werden durch einen schmalen Einschnitt in den unteren Rand des Nasenseptums eingeführt. Der dorsale Abschnitt wird an der Spina nasalis befestigt.

Es ist dem Verfasser gelungen, mit Hilfe dieser Vorrichtung die Nase genügend vorspringend zu machen, um ein gutes kosmetisches Ergebnis und befriedigende Atmungsfunktion zu erzielen. Der Einschnitt wird in zwei Lagen verschlossen.

Die Widerstandsfähigkeit des Gebildes erwies sich in hundert Prozent als zufriedenstellend.

SUMARIO

O autor descreve uma estrutura acrílica de duas partes para retaurar a forma emcasos de nariz chato devido a destruição ou colápso morfológico.

As duas secções dessa estrutura são introduzidas através de uma pequena incisão na columela. A porção dorsal é ligada à espinha nasal.

Com o uso dêsse invento o autor conseguiu dar ao nariz a projeção necessária para um bom resultado estético o função respiratória. A incisão é fechada em duas camadas.

A tolerância à estrutura foi 100 por cento satisfatória.

RÉSUMÉ

L'auteur décrit une structure acrylique en deux parties, utilisée pour la réparation du nez camus.

Les deux parties de cette structure sont introduites par une petite incision de la columelle. La partie dorsale est fixée à l'arête nasale.

Grâce à ce dispositif l'auteur a réussi à donner aux nez traités une bonne apparence esthétique, avec une fonction respiratoire normale. L'incision est fermée en deux plans.

La tolérance de cette structure s'est révélée satisfaisante dans 100% des cas.

L'application de points doubles implique les modifications suivantes:

1. Ils sont fixés sur la ligne médiane.
2. Le second point ne passe ni antérieurement ni postérieurement à travers le lambeau muqueux. Ainsi, la ligature doit passer par le bord du lambeau, et le contact entre la muqueuse inversée et la paroi cervicale est amélioré.
3. Le premier des deux points passe à travers le lambeau muqueux qui est le plus éloigné du bord.

Le "rail" cervical, instrument précieux pour les opérations sur le col, qui conduit l'aiguille et protège les tissus, est également décrit.

ZUSAMMENFASSUNG

Es wird über eine neue Art von Zugnähten (T 1 und T 2), die die folgenden Funktionen erfüllen, berichtet:

1. Sie gestatten eine ausgezeichnete Exponierung des Gebärmutterhalses.
2. Sie immobilisieren den Gebärmutterhals und schalten den Gebrauch verletzender Instrumente aus.
3. Sie gestatten einen sauberen Verschluss der Schleimhaut nach der Umstülpung.
4. Sie dienen als zusätzliches Hilfsmittel zur Blutstillung.

Die Verwendung von Doppelnähten erfordert folgende Modifizierungen:

1. Sie werden in der Mittellinie angelegt.
2. Die zweite Naht wird weder vorn noch hinten durch den Schleimhautlappen hindurchgeführt. Infolgedessen muss die Ligatur durch den Rand des Lappens hindurchgehen, und der Kontakt zwischen der eingestülpten Schleimhaut und der Wand des Gebärmutterhalses wird verbessert.
3. Die erste der beiden Nähte wird weiter vom Rande entfernt durch den Schleimhautlappen hindurchgeführt.

Ferner wird ein bei Operationen am Gebärmutterhals nützliches Instrument, die Kollumschiene, beschrieben, die den Weg der Nadel leitet und das Gewebe schützt.

RIASSUNTO

Vengono presentati nuovi metodi di trazione (T1 e T2) che hanno i seguenti vantaggi:

1. Realizzano una eccellente esposizione della cervice.
2. Immobilizzano la cervice ed eliminano l'impiego di strumenti traumatizzanti.
3. Consentono una perfetta chiusura della mucosa.
4. Hanno una funzione emostatica.

La applicazione di due punti comporta:

1. La loro applicazione sulla linea mediana.
2. Il secondo punto non passa attraverso la mucosa nè anteriormente nè posteriormente.
3. La prima coppia di punti passa attraverso il lembo di mucosa lontano dall'orlo.

Viene infine descritto uno strumento molto utile per gli interventi sulla cervice, che serve di guida all'ago e protegge i tessuti.

RESUMEN

Se presentan unas nueras suturas de tracción (T1 y T2), que tienen las siguientes funciones:

1. Dan excelente exposición del cervix.
2. Immovilizan el cervix y evitan el uso de instrumentos traumatizantes.
3. Permiten un cierre perfecto de la mucosa después de la inversión.
4. Función hemostática adicional.

La aplicación de las suturas gemelas incluye las siguientes modificaciones:

1. Se colocan en la linea suedia.
2. La segunda sutura no se pasa a través del colgajo de mucosa ni anterior ni pos-

plakia. He covered the defect remaining, after the skin margins had been undercut and closed as far as possible without tension, with a split thickness skin graft held in place with a large stent dressing. The graft "took" well. Follow-up examinations showed that the graft remained healthy; the area was not tender, and there was no interference with normal coitus.

After a study of the literature on this subject, the impression left with me was that most of the surgeons were quite aware of the radical treatment that is necessary for carcinoma of the vulva. Extensive descriptions were given of the methods used to eradicate the carcinoma and to dissect out the surrounding lymph nodes. Few of these surgeons, however, gave any attention to the large wound left exposed in the perineal region. Most of those who have had the widest experience in this field stated that it is best to leave the wound open and let it granulate and epithelialize spontaneously, while some recommended putting a few small pinch grafts on the open wound, hoping that this would hasten epithelialization. These procedures obviously left a large draining wound that would greatly lengthen convalescence and leave a scarred, contracted perineum that was naturally uncomfortable to the patient.

This failure to graft the open wound initially may be due to an understandable reluctance to prolong an already lengthy operation on a "poor risk" patient, or to the technical difficulties frequently encountered in applying a skin graft on the perineum.

It is common practice nowadays for surgeons to apply skin grafts to the thoracic wall after radical mastectomy if the edges of the skin cannot be brought together without tension. It appears to me that the same reasoning should hold for radical vulvectomy. Mitchell's[8] paper is one of the few in the literature that describes a satisfactory method for proper coverage of the large perineal wound at the time of the original operation. After reading of the hundreds of patients who have undergone radical vulvectomy, I am disturbed to think how some of these women felt after the operation, during convalescence and even after complete epithelialization had finally occurred. Rubin and Lewis[9] reported 1 case of radical vulvectomy in which follow-up examination showed the presence of several severe dense scar formations, especially over the perineal body and the region between the vulvectomy site and the lymph node dissection. They went on to say that, despite the contracted condition of the perineum, the patient gave birth to a child through the vaginal route. This patient must have been well sedated for such a scar-stretching experience. Twombly[3] stated that vul-

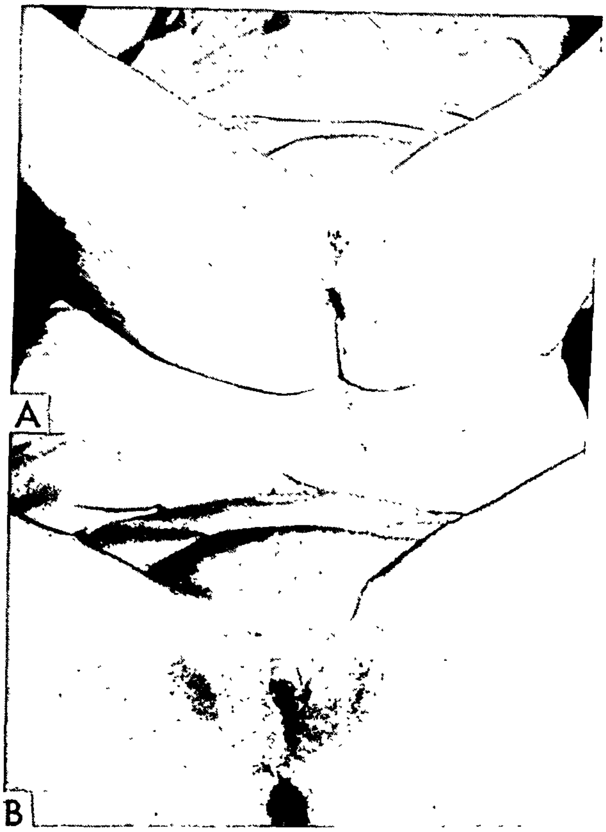


Fig. 1.—*A*, condition of perineum after radical vulvectomy (see text). *B*, condition after release of constricting scar tissue.

quite exsanguinated. If a patient has missed a menstrual period, even by a few days, this is often a cue; one of the simpler methods of early diagnosis of ruptured ectopic pregnancy is a cul-de-sac puncture revealing blood that does not coagulate normally. In probably 80 to 90 per cent of the cases the patient has missed a menstrual period. There is probably the beginning of a flow, or at least a show of blood. Some of the pain is frequently of value in ectopic rupture due to the blood irritating the peritoneal cavity about the diaphragm, etc.

Ovarian neoplasms do not always produce early pain, but if a solid tumor is present it should be regarded as possibly a malignant tumor.

In evaluating the pain which is complained of by individuals we should not overlook the so-called traumatic abdominopelvic pain. A certain number of patients will come into this category, but certainly they should not be so classified until all possible forms of pathologic change have been ruled out.

Relief from certain types of pelvic pain can be obtained by sympathectomy and the intraspinal injection of alcohol. The intractable pain associated with carcinoma of the uterus, particularly the cervix, is relieved by such procedures. Pelvic sympathectomy, or removal of a part of the sympathetic nerve plexus, known as the presacral nerve or the superior hypogastric plexus, is not a serious operation. The intraspinal injection of alcohol is used on occasion by some neurosurgeons and has proved valuable.

Guerriero and Stuart did an elaborate piece of work on "checking out" the chief complaints of 5,539 patients who were admitted to the hospital under their observation with the chief complaint of pelvic pain. There were 1,371 cases in which the pain was of gynecic origin or simulating gynecic pain. Five hundred and seventy-one, or 41.6 per cent, of these women actually had pelvic pain of other than gynecic origin, and 800, or 58.4 per cent, had gynecic states to explain the origin of their pain. Guerriero and Stuart stated that only 10.6 per cent of these women required major operations for the relief of pain. They recommend that, unless an acute state requires it, operation can be deferred until the cause of the pain has been determined.

The management of severe dysmenorrhea and pelvic pain is as much a problem now as it was in 1852, when Marion Sims stated in his handbook on gynecology: "Of all the newly found drugs, not any is of much value to the woman with severe cramps, except laudanum." In 1921 Leriche made a complete study of the pelvic sympathetic system in its relation to pelvic pain. He developed periarterial sympathectomy of the internal iliac arteries. In 1925 Cotte noted that the same results could be obtained by resection of the superior hypogastric plexus. Cotte called the superior hypogastric plexus the presacral nerve.

The pain of cervicitis, the pain of labor in its first stage and the retroumbilical (not umbilical) pain of appendicitis are pure visceral pains, deep-seated, ill localized and with no somatic component.

Rupture of the corpus luteum may present a clinical picture essentially similar to that of a ruptured follicle, except that the time of onset of menstruation is different. Many women with acute bilateral pelvic pain do not have pelvic inflammatory disease, at least not in an acute inflammatory stage.

Pelvic cellulitis is observed most frequently during the puerperium; it often occurs, however, in nonpregnant patients after uterine or cervical instrumentation.

Intraperitoneal rupture of a tubo-ovarian abscess is a major catastrophe. The patient may or may not have been known their normal anatomic positions. It was also the impression that reconstruction of mounds of soft tissue next to the vaginal orifice, resembling labial folds, would give additional protection to the vagina and the urethra and at the same time enable the patient to sit comfortably and to climb stairs.

On April 18, 1955, she was taken to the operating room for release of the perineal scar contractions and reconstruction of the labial folds (Fig. 2, *A* to *E*). Incisions were made on both sides of the vaginal opening on the medial aspects of the thighs, approximately 15 cm. from the vagina. This circular incision measured approximately 20 cm. in length and extended from the mons pubis down to the level of the rectum. A large pedicle flap, based medially, was then elevated. The dissection was carried down close to the urethral and vaginal openings, thereby releasing the scar contraction, which extended radially from the vaginal opening. After release of the scar contraction, the vagina and urethra settled back into their normal positions. A similar procedure was done on each side. The flap was then folded on itself in order to form a raised mound of soft tissue resembling the labia. The flap was sutured down to the subcutaneous tissue with several interrupted No. 4-0 horizontal mattress dermalon sutures. A large open wound along the lateral portion of these flaps over the medial aspect of the thigh was then covered with large split thickness skin grafts taken from both thighs. The grafts were sutured in place with several interrupted and continuous No. 5-0 dermalon sutures. Pressure was maintained over the grafts with a large stent dressing held in position with interrupted No. 3-0 silk sutures.

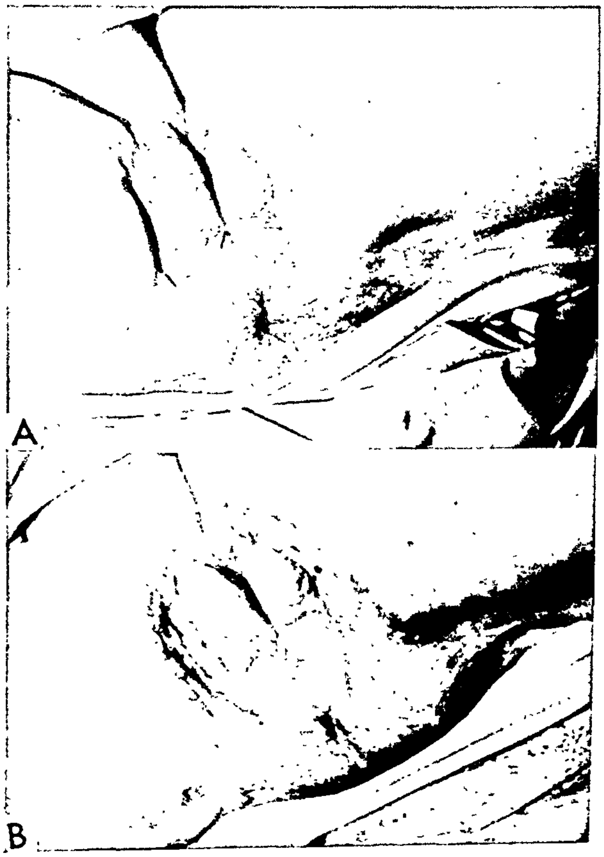


Fig. 3.—*A*, approximately two months after the operation. *B*, one year after the operation.

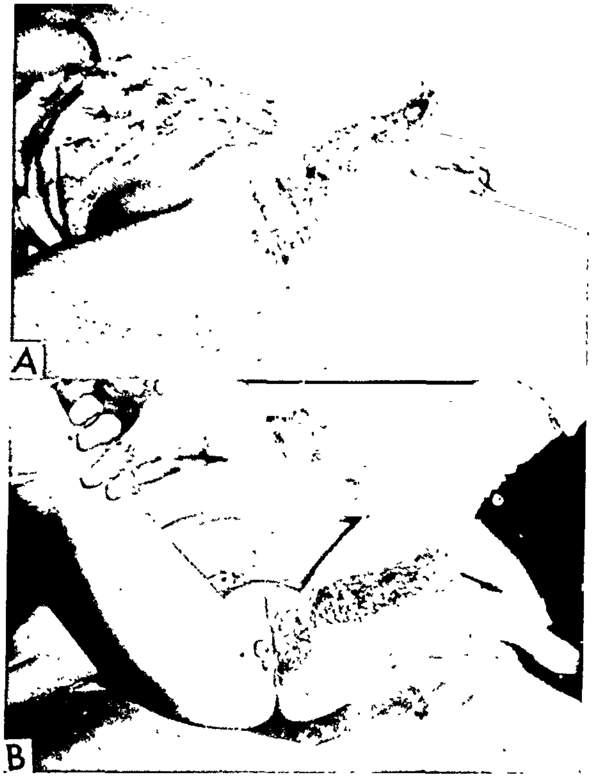


Fig. 4.—*A*, extensive necrosis of left labium and medial fold. *B*, healthy granulating base.

After the operation constant drainage with a catheter was established, and the patient was given medication to suppress bowel movements. One week after the operation the dressing was removed, and it was noted that the skin grafts had "taken" most satisfactorily—nearly 100 per cent on the right side and 90 per cent on the left side was noted at the time of the first dressing. The patient was kept in bed for approximately three weeks, until complete healing had taken place. She was discharged from the hospital on May 15.

might better be described as somatogenic or psychogenic. In the development of a psychosomatic disorder there are three requisites: (1) a psychoneurotic predisposition, (2) an exciting emotional conflict and (3) restriction of outward expression of the conflict.

It should not be overlooked that pain is a symptom common to all parts of the body. The genital tract is, of course, no exception. It is estimated that pelvic pain accounts for at least 35 per cent of the admissions to a gynecologic ward. The urologic system or phase should not be overlooked by anyone at any time in diagnosing obscure pains in the pelvis or the lower part of the abdomen, especially if the complaint is chronic.

Pain, as Mengert has classified it, might be categorized as follows:

Pain of genital origin

1. Pain due to gonorrhea, pelvic inflammatory disease, pelvic cellulitis or hemorrhage.
2. Pain due to uterine prolapse, adhesions, twisted pedicle of ovarian cyst
3. Pain due to periodic distention of an endometrial implant
4. Pain caused by tumor incarcerated in the pelvis
5. Pain accompanied with rupture of uterus, tube or bladder.

Pain of extragenital origin

1. Pain originating in pelvic neurosis
2. Pain originating in other pelvic structures: (a) bony, sacroiliac; (b) urinary tract, or (c) intestinal tract: colitis, diverticulitis, appendicitis.

Hemorrhage from a ruptured follicle, a cyst of the corpus luteus or ovulation may at times be confusing. Chronic pelvic pain is often the result of pathologic change in the cervix. Deep-seated dyspareunia is frequently due to a chronic disease of the cervix. Uterine prolapse of the second or third degree can cause pain by producing the dragging-down sensation. A retrodisplaced uterus is not looked upon as a cause of pelvic pain nearly as often as it formerly was.

There is grossly little clinical or pathologic similarity between adenomyosis and the large "chocolate cyst" of the ovary.

An idea commonly accepted by the laity is that pelvic pain indicates disease of the female organs. The majority of women seen by the gynecologist seek medical attention because of pain low in the abdomen or the back. The investigation of pelvic pain, therefore, may be time-consuming and expensive, but the patient still merits a detailed survey before an exploratory operative procedure or any nonindicated drug therapy is employed. The gynecologic diseases causing pelvic pain might be listed as: (1) cervicitis and parametritis; (2) uterine enlargement; (3) pelvic endometriosis; (4) malposition of the uterus; (5) pelvic congestion, and (6) adnexal disease. Cervicitis is manifested by erosion, hypertrophy, eversion, cystic change and laceration. Enlargement of the uterus causes backache and abdominal pain because of pelvic congestion due to the stretching of supportive ligaments, due in turn to the increased size of the uterus.

Endometriosis of the pelvic viscera has a high place among gynecologic causes of pelvic pain. Gynecologists are becoming more keenly aware of this condition, and the diagnosis is much more frequently made in recent years than it formerly was.

The presence of tender cul-de-sac nodules, a retroverted, tender uterus and fixed adnexae in a patient who complains of backache, pain in the lower part of the abdomen, dysmenorrhea and dyspareunia offers strong evidence that endometriosis is present. Uterine malposition, particularly prolapse, is a frequent cause of low abdominal pain and backache. Taylor amplified the concept of pelvic congestion as a cause of pelvic pa [illegible] d a "congestion fibrosis"

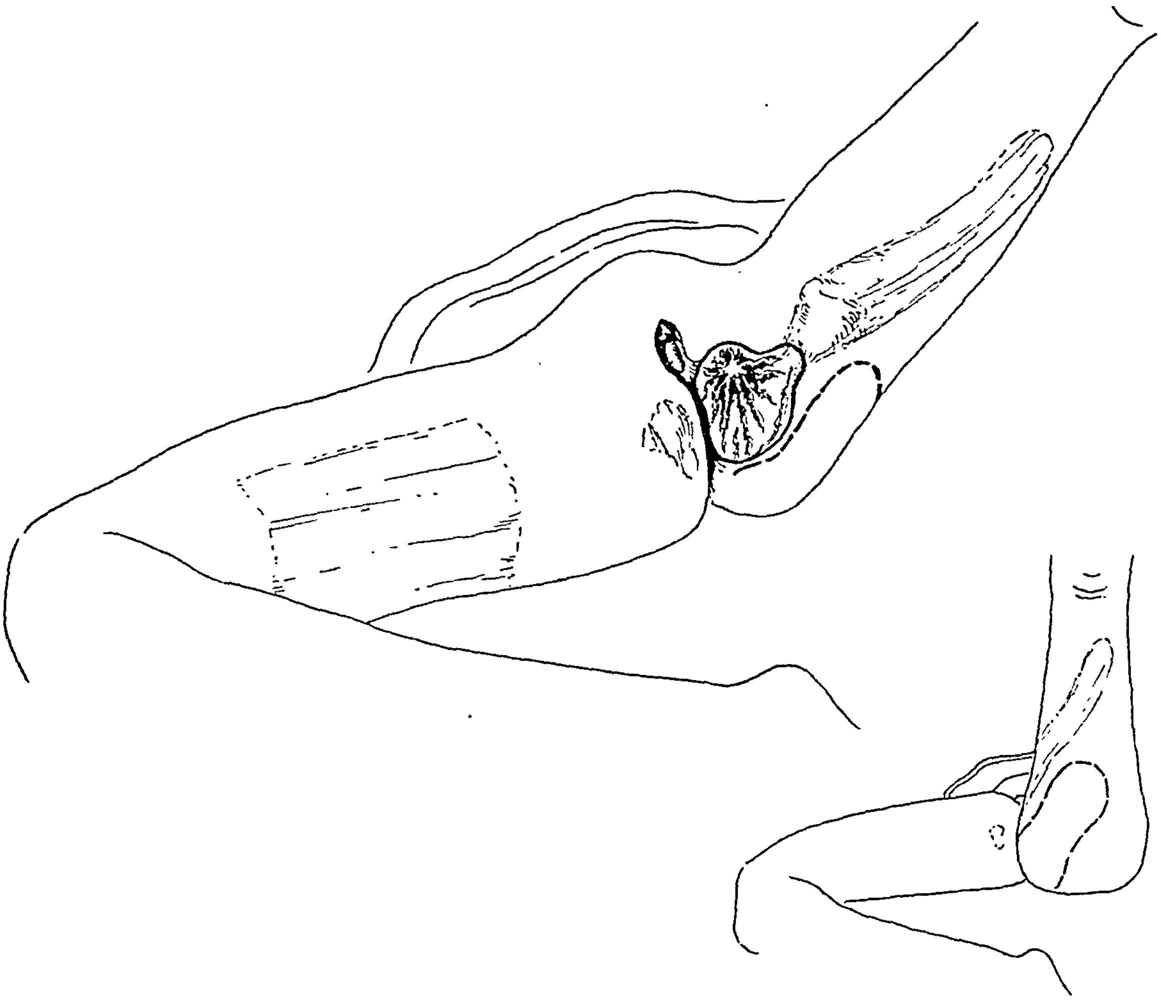


Fig. 6.—Pedicle flap outlined.

The next case is that of a 5-year-old girl with rather extensive necrosis of the left labia, due to having been struck by an automobile. This case is being presented to demonstrate another method of reconstruction of the labial folds. This method can also be used satisfactorily for the same purpose after radical vulvectomy.

A girl 5 years old was struck by an automobile on Jan. 26, 1955. According to witnesses, she was lodged under the vehicle and was released only after the car had been jacked up. There was an extensive crush injury of the soft tissues of the medial aspect of the left thigh and left labia. I first saw this patient on February 7 (Fig. 4 *A*) at which time examination revealed an extensive area of necrosis along the inner medial aspect of the left thigh and perineum. This necrotic area involved the major portion of the left labial region and extended close to the rectum, vagina and urethra. On February 10 débridement of the entire necrotic area was done. After débridement the dressing was changed daily until clean, healthy granulations appeared. On February 17 (Fig. 4 *B*) the granulating area over the thigh and

Primary Carcinoma of the Fallopian Tube

Report of a Case

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THE rarity of primary carcinoma of the fallopian tube prompts this report. This is one of the rarest of all malignant diseases. Only a few over 500 cases have been reported in the literature[1] up to the time of writing. The diagnosis is seldom made before operation.[2] A greater familiarity with this subject on the part of more surgeons is desirable, because this lesion is one of the most malignant of body cancers.[3]

Incidence.—The reported incidence varies between 0.31 per cent and 0.5 per cent of female pelvic malignant tumors.[4] In one controlled series of 12 cases, it was as low as 0.16 per cent. The lesion has been observed in patients from 17 to 80 years of age. About three-fourths of the patients in the cases reported were past the menopause and were nulliparous. Wechsler reported that two-thirds of his patients were between 40 and 45 years of age, and Hu stated that most of his were between 40 and 65.[4a] Raynaud is given credit by some authors for recording the original case in 1847. By others, the credit is given to Orthman (1886) for the first description.[4a]

Pathologic Picture.—The pathologic picture was first described by Rokitansky in 1861.[5] In the cases reported the tumor has been adenocarcinoma.[1b] It arises in the mucous membrane and shows a papillary pattern. It usually causes the formation of a hydrosalpinx, and the symptoms are those of inflammation of the fallopian tube.[1a] Spread may take place by lymphatics, blood stream, direct extension and peritoneal implantation. It is similar to the spread of ovarian malignant neoplasms and often involves the retroperitoneal route to the presacral nodes.[6] The carcinoma is often not discovered until the tube is opened. The lesion is usually in the distal two-thirds of the tube and often is associated with tuberculosis in the tube.[1a] In a few cases it has been diagnosed by Papanicolaou smear before operation.[7]

Prognosis.—In about 25 per cent of cases recurrence has taken place in one year.[1a] Survival rates have been discouraging; less than 4 per cent of the patients were reported to have survived for three years.[4a] Haupt reported only 6 survivals among 321 patients in eight years.[1a]

Symptoms.—Authors agree that pain is an early symptom. The pain may be sharp and intermittent or persistent and dull. It is usually located in the region of the affected tube and in the back.[4] Occasionally it is referred to the bladder or the rectum or radiates down the leg.[8]

A mass is usually palpable in the pelvis or the abdomen, and the lesion may be confused with salpingitis, ovarian cyst, myoma of the uterus or ectopic pregnancy.[9] Occasionally the mass may disappear or become smaller after a vaginal discharge.[4a] Vaginal discharge of some kind is usually present and may vary from leukorrhea to bleeding. Any serous or serosanguinous discharge from the cervix should cause s [illegible] ee lesi

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From the Hadley Memorial Hospital, Washington, D. C.
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RÉSUMÉ

L'auteur rapporte deux cas, démontrant deux techniques opératoires en un temps pour le soulagement des rétrécissements cicatriciels du périnée et la reconstruction des lèvres. La partie la plus importante de cet article traite des diffcultés de la suture primaire de la plaie périnéale après vulvectomie radicale. Il est clair que l'indication la plus fréquente de reconstruction labiale se présente chez les malades ayant subi une résection radicale de la vulve (tumeur maligne ou bénigne). Les deux techniques opératoires décrites pourraient être appliquées de façon satisfaisante chez des malades ayant subi une vulvectomie radicale et souffrant des symptômes pénibles résultant d'un rétrécissement cicatriciel grave du périnée. Il est à souligner que les techniques appropriées de reconstruction, associées à la vulvectomie radicale initiale, élimineraient dans certains cas la nécessité d'une opération plastique secondaire.

ZUSAMMENFASSUNG

Es wird über zwei Krankheitsfälle berichtet, an denen zwei verschiedene einzeitige operative Verfahren dargestellt werden, die sich zur Beseitigung narbiger Kontrakturen in der Dammgegend und zur Wiederherstellung der Schamlippen eignen. Ein grosser Abschnitt der Arbeit ist der Besprechung der beim primären Verschluss der Dammwunde nach radikaler Resektion der Vulva auftretenden Schwierigkeiten gewidmet. Am häufigsten entsteht eine Indikation zur Wiederherstellung der Schamlippen offenbar bei Patientinnen, die wegen bösartiger oder gutartiger Geschwülste einer radikalen Resektion der Vulva unterzogen werden mussten. Wenn in solchen Fällen Beschwerden infolge schwerer Narbenkontrakturen des Dammes auftreten, lassen sich beide in der Arbeit beschriebenen Techniken mit gleichmässig zufriedenstellendem Erfolg anwenden. Es muss allerdings hervorgehoben werden, dass geeignete plastische Massnahmen in Verbindung mit der ursprünglichen radikalen Resektion der Vulva in vielen Fällen die Notwendigkeit späterer plastischer Operationen überhaupt auszuschalten vermögen.

RESUMEN

Se reportan dos casos para demostrar dos diferentes procedimientos operatorios de un tiempo para liberar las contracturas cicatriciales alrededor del perineo y reconstruir los labios. La mayor parte del artículo trata de las dificultades encontradas en el cierre primario de la herida perineal después de vulvectomía radical. Obviamente, el caso en que más frecuentemente está indicada la reconstrucciòn de los labios es en pacientes que han sido sometidas a resección radical de la vulva ya sea por tumores malignos ó benignos.

Las técnicas operatorias descritas para cada un serán satisfactoriamente empleadas como un procedimiento secundario en los casos de las pacientes que han sido sometidas a vulvectomía radical y que se quejan de síntomas severos como resultado de severas contracturas cicatriciales en el perineo. Hay que enfatizar, sin embargo, que los procedimientos reconstructores propiamente, en conjunción con la vulvectomía radical inicial, eliminarían en muchos casos la necesidad de una operacion plástica secundaria de cualquier clase.

SUMARIO

Apresenta dois casos para ilustrar dois métodos diferentes, em estágio único, na correção de retrações cicatriciais do perineo com reconstrução da vulva. Na mior parte do trabalho o A. estabelece as difi-

Ophthalmologic Surgery

The Beta Applicator as an Ophthalmic Therapeutic Tool*

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IN order to consider beta radiation as a therapeutic tool, one must first understand something of its mode of action. The following facts are pertinent:

To be effective, radiation must be absorbed by tissue, not just pass through. High energy radiations, therefore, pass through the anterior segment of the eye with too little absorption to be therapeutically effective, but beta particles from radium, radium D, radon and radioactive strontium penetrate only superficially and are absorbed by the tissues of the anterior segment.

This absorption releases energy in each tissue cell involved, causing damage by ionization, especially in the nucleus, to a degree that varies with the dose. This damage can result in cellular death either from an overwhelming single dose or from cumulative effects. Damaging effects from smaller doses, however, may permit tissue recovery, but, reversible or not, the effect of radiation is always to damage, if not to destroy.

Indications.—Pterygium is the most common indication for beta therapy, and both the primary and recurrent forms are treated the same way. Beta radiation is used postoperatively rather than as the only treatment. This not only reduces the dosage considerably but improves the cosmetic result. The usual procedure is to resect the pterygium, leaving a large bare area of sclera, which is then partially closed along a horizontal line by mobilizing the conjunctiva. A bare scleral crescent remains near the limbus, however, and it is here that the postoperative irradiation is applied, causing subsequently a tight, avascular scar, across which recurrence is rare. As a rule, this requires two beta treatments, one about five days after the operation and again in three or four weeks, especially if there is a tendency to some limbal vascularization at some particular point during this time.

Beta radiation alone can be used to stop the progression of pterygium, reducing it to a dense, inactive scar. This scar is white, however, and not cosmetically satisfactory. For this reason and because considerably more radiation is needed to effect this change than to prevent recurrence after operation, beta irradiation is not recommended as an exclusive and primary treatment of pterygium, but should be used postoperatively.

Chronic inflammatory tumor or excess granulation tissue also can [illegible] th beta therapy. These oc [illegible] sma [illegible] io

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have broad, flat, shallow ones. There are some with seemingly normal cutaneous tension and others with a prematurely aged appearance, a condition to which acne scars contribute a great deal. The last-mentioned type, with its management, is of interest in this presentation.

After examining a large number of patients with post-acne scarring, one is impressed by the fact that many of them, though not all, appear prematurely aged and wrinkled. By handling the skin it is possible to detect a feeling of looseness and a decrease in elasticity. It can also be noted that the skin seems to fall or wrinkle into the pitted scars, especially the broad, flat variety. This wrinkling is particularly accentuated in smiling and is easily demonstrated by pulling the skin from the preauricular area toward the oral commissure. Conversely, by tensing the facial skin toward the ear, as in evaluating a candidate for a meloplasty, one notes a great decrease in the pitted and wrinkled appearance. Age appears to have little relation to these appearances; for example, they may be seen in a woman who, chronologically, is in her twenties, however much older in appearance.

Pathologic Observations. — Samples of normal skin were obtained from the preauricular area of a subject of comparable age to subjects with acne scarring who were undergoing surgical abrasion and from whom samples of preauricular skin were also obtained. Routine hemotoxylin and eosin sections and elastic tissue stain sections of these samples were made. In the normal sample, the routine characteristics of normal skin, associated with an expected amount of elastic tissue, were observed (Fig. 1*A*). In the samples of skin affected with acne, the usual follicular plugs with perifollicular vascular and lymphocytic infiltration and the expected fibrosis in the pitted areas were noted. In addition, however, the elastic tissue did not appear to be present in normal amounts but was decreased and fragmented (Fig. 1*B*), as was observed by a pathologist uninformed of our interests.

Treatment.—In view of the clinical observation of premature wrinkling in some cases of acne scarring and the pathologic evidence of a decrease of varying degrees of the elastic fiber in sections of skin from the affected areas, it was thought preferable to respect both factors in the surgical management of the problem. Surgical abrasion, therefore, was combined with face lifting in many patients with this disease (Fig. 2). In some instances, when the scars were of the broad, flat variety and the wrinkling seemed pronounced, surgical abrasion was deleted and meloplasty only was done (Fig. 3). In a good proportion of all patients with acne scarring, however, the tension of the skin approximated a normal state and only abrasive therapy was done (Fig. 4). Some surgeons may be managing these problems in a similar fashion. A brief review of the literature, however, has not revealed such a report.

SUMMARY

Patients with post-acne scarring may have premature wrinkling of the facial skin into the pitted areas. In such cases, a decrease in the elastic fiber of the skin has been noted. The treatment preferred in these cases was surgical abrasion and meloplasty and, in a few instances, meloplasty alone. It is appreciated that the premature wrinkling may be due to fibrosis in the scarred areas as well as to a decrease in the elastic tissue.

RESUMEN

Los pacientes con cicatrices post-acné pueden tener arrugas prematuras en la by the additional variable of applicator dose rate. It is true that beta applicators are calibrated by the manufacturer, but a fluctuating M.I.D. from one applicator to another would seem to indicate inaccuracies in the methods of calibration used in the past (Table 1).

The physical measurement of beta radiation has been a complex, difficult problem, [illegible] for clinical purposes the need is for constancy of calibration rather than absolute accuracy. Table 1 indicates a definite trend toward a more nearly constant M.I.D. among some of the more recent strontium applicators. This is encouraging, and it may mean that physical methods of calibration will prove consistent enough to be clinically dependable. There is too much at stake, however, to accept this trend as fact until it is firmly established, especially since physical calibration has been unreliable clinically in the past, and biologic standardization of each new applicator has proved to be an adequate safeguard in dosage calculations prior to its use on human eyes.

Complications.—In beta-irradiated ocular tissues, late changes, such as telangiectasis and keratinization of the conjunctival epithelium, atrophy of the sclera, keratitis, corneal scarring and thinning, iritis, iris atrophy, and radiation cataract have been discussed by several authors.[2] Except for conjunctival telangiectasis, which I have seen following 6,000 rep, but which can occur in some persons after dosages under 5,000 rep,[2c] and also except for lens changes, to be discussed presently, the complications of beta radiation are the result of dosages that are frequent-

TABLE 2.—*Clinical Indication and Dosages in Terms of Minimum Inflammatory Dose (M.I.D.).*

Condition	Average Total Dosage: M.I.D. Dosage Factor	Average Total Dosage: Example for Applicator with M.I.D of 20,000 REP.	Comment
Benign neoplasms	0.15 M.I.D.	3,000 REP.	2-4 fractions after excised to base
Carcinoma, basal, squamous	0.20	4,000	Preliminary, superficial, subtotal irradiation in single fraction
Carcinoma, Bowen's	0.30	6,000	4-8 fractions for early, thin lesion, or excised to base
Chronic inflammatory tumor	0.10	2,000	Small, single fractions guided by response
Granulation tissue	0.10	2,000	One or two treatments
Phlyctenulosis	0.03	600	Only for most persistent lesions
Plaque, epithelial	0.25	5,000	Excised to base with 2-3 fractions postoperatively
Pterygium	0.15	3,000	Treat at 5 days and 30 days after operation
Scleritis	0.05	1,000	Treat symptoms only
Trichiasis	0.08	1,600	Epilation dose about equal to S.E D.
Corneal ulcer	0.025	500	Better for more chronic types; use proximal spray technic
Vascularization, corneal	0.25	5,000	Superficial types only
Vernal conjunctivitis	0.09	1,800	Treat [illegible] onl

have broad, flat, shallow ones. There are some with seemingly normal cutaneous tension and others with a prematurely aged appearance, a condition to which acne scars contribute a great deal. The last-mentioned type, with its management, is of interest in this presentation.

After examining a large number of patients with post-acne scarring, one is impressed by the fact that many of them, though not all, appear prematurely aged and wrinkled. By handling the skin it is possible to detect a feeling of looseness and a decrease in elasticity. It can also be noted that the skin seems to fall or wrinkle into the pitted scars, especially the broad, flat variety. This wrinkling is particularly accentuated in smiling and is easily demonstrated by pulling the skin from the preauricular area toward the oral commissure. Conversely, by tensing the facial skin toward the ear, as in evaluating a candidate for a meloplasty, one notes a great decrease in the pitted and wrinkled appearance. Age appears to have little relation to these appearances; for example, they may be seen in a woman who, chronologically, is in her twenties, however much older in appearance.

Pathologic Observations. — Samples of normal skin were obtained from the preauricular area of a subject of comparable age to subjects with acne scarring who were undergoing surgical abrasion and from whom samples of preauricular skin were also obtained. Routine hemotoxylin and eosin sections and elastic tissue stain sections of these samples were made. In the normal sample, the routine characteristics of normal skin, associated with an expected amount of elastic tissue, were observed (Fig. 1*A*). In the samples of skin affected with acne, the usual follicular plugs with perifollicular vascular and lymphocytic infiltration and the expected fibrosis in the pitted areas were noted. In addition, however, the elastic tissue did not appear to be present in normal amounts but was decreased and fragmented (Fig. 1*B*), as was observed by a pathologist uninformed of our interests.

Treatment.—In view of the clinical observation of premature wrinkling in some cases of acne scarring and the pathologic evidence of a decrease of varying degrees of the elastic fiber in sections of skin from the affected areas, it was thought preferable to respect both factors in the surgical management of the problem. Surgical abrasion, therefore, was combined with face lifting in many patients with this disease (Fig. 2). In some instances, when the scars were of the broad, flat variety and the wrinkling seemed pronounced, surgical abrasion was deleted and meloplasty only was done (Fig. 3). In a good proportion of all patients with acne scarring, however, the tension of the skin approximated a normal state and only abrasive therapy was done (Fig. 4). Some surgeons may be managing these problems in a similar fashion. A brief review of the literature, however, has not revealed such a report.

SUMMARY

Patients with post-acne scarring may have premature wrinkling of the facial skin into the pitted areas. In such cases, a decrease in the elastic fiber of the skin has been noted. The treatment preferred in these cases was surgical abrasion and meloplasty and, in a few instances, meloplasty alone. It is appreciated that the premature wrinkling may be due to fibrosis in the scarred areas as well as to a decrease in the elastic tissue.

RESUMEN

Los pacientes con cicatrices post-acné pueden tener arrugas prematuras en la

Ocular Tendon Transplantation: Indications, Variations and Technic

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BY operating on the extraocular muscles it is possible to create either of two effects; that is, to weaken or strengthen the mechanical purchase exerted by the muscles upon the globe. Weakening (or lengthening) procedures are: (1) tenotomy, (2) myotomy, (3) myectomy and (4) recession. Strengthening (or shortening) procedures are: (1) advancement, (2) tuck, (3) resection, (4) cinch and (5) transplantation.

Attention is herewith directed to the transplantation of ocular muscles. It is a method not commonly used and is regarded unfavorably by many surgeons. The fact that its use has proved disappointing in some cases is probably due to the fact that the procedure has definite limitations; when these are exceeded, poor results are inevitable. More important, perhaps, are the indications for its use, which must be observed rigidly.

Strictly speaking, surgical transplantation is not a strengthening procedure, but rather a substitution for the function of a paretic muscle accomplished by altering the direction of action of one or more other muscles. More specifically, the insertion, and also the point of contact, of a nonparalyzed muscle may be used so that the resulting effect will compensate for the action of the paralyzed muscle.

Transplantation has taken many forms and has been applied to all manner of oculomotor disturbances. It has many advocates, but there are those who hold it in disdain. The fact that the method has been tried mostly in problem cases, probably in desperation, has contributed to this disparagement. The term is usually applied to various forms of substitution in the surgical treatment of paralysis of the lateral rectus muscle.

Operation for Paralysis of the Lateral Rectus Muscle. — Acquired abducens paralysis is characterized by convergent deviation, limitation of abduction and homonymous diplopia, which eventually may give way to suppression. In cases of long-standing paralysis, contraction of the antagonistic medial rectus muscle may develop, as well as a tendency to turn the head toward the affected side. Spontaneous recovery will occur in some cases, and therefore, before surgical intervention is considered, a reasonable period—six to twelve months—should be permitted for observation, especially if the origin of the paralysis is traumatic. When no improvement occurs during this interval, operation is indicated.

The object of surgical intervention, of course, is to establish parallelism of the visual axes in the primary position. If this result can be obtained and normal retinal correspondence is present, binocular single vision in this position is to be expected. When long-standing suppression has been established and then suddenly abolished by operation, however, diplopia of a most annoying type may result. Also, when contraction of the

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Critical Use of Skin Grafts

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IT was not many years ago that the grafting of skin in itself was of sufficient significance to make the healed end result seem satisfactory. This is not surprising when one recalls that the free grafting of skin was first done successfully in the human being less than a century ago (Reverdin, 1869; Ollier, 1872, Thiersch, 1874, and Wolfe, 1875) and that tubed pedicles were first reported by Filatoff in 1917 and Gilles in 1920. Technical advances and the increased skill of more surgeons have developed the use of skin grafts since the First World War, especially in the past twenty years. Plastic surgeons have pointed the way and have increased the knowledge, so that some skin grafting is now done by many competent surgeons. It is only natural, therefore, that a more critical appraisal of the choice of grafts, the methods and the results has evolved.

The purpose of this paper is to present some opinions based on clinical observations, as to the selection by a rationale, I have found useful. The technical aspects of applications will be omitted. A simple classification of grafts which has been used is as follows:

- Pedicle grafts
  - Local flaps
  - Distant flaps
- Tubed pedicle grafts
  - Free skin grafts
  - Reverdin grafts
  - Small deep pinch grafts
  - Postage stamp and strip grafts
  - Thin split-thickness or Ollier-Thiersch grafts
  - Thick split-thickness grafts
  - Full-thickness graft of Wolfe

The ideal graft replaces exactly the missing part. The color, the thickness, the vascularity, the nerve supply, the pigmentation, the texture, the epithelial elements (hair) and the subcutaneous tissues are characteristics to be considered. Because these characteristics are frequently best matched by adjacent skin, usually a flap or graft from a distant part is not the best. This fact is recognized in the use of multiple-stage excision, advancement flaps, rotation flaps and especially in simple undermining and closure when possible.

Determining factors in the choice of grafts are the availability of the graft, the expediency of the surgical procedure and the needs of the patient or part. There must also be an operating surgeon capable of executing the procedures selected and a patient who is willing to withstand the surgical treatment required. If the graft has been selected with care and the requirements of the patient and the recipient site have been evaluated carefully, the best result frequently is obtained by using the simplest and most direct method. In some cases the proper graft is not available, or a graft with the ideal characteristics may be impossible to obtain; for instance, the face may be completely burned, and the free graft may fail to reestablish a complete nerve supply. In general, there are two reasons for the grafting of skin. The first and most important is to restore function; the second is to restore the appearance of the part. A perfect functional

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tion (Fig. 4) as was done in this case. It is important when one reattaches the split portions of the tendon to have these flattened out so as to provide as wide an attachment as possible, with minimal reaction, and this may be accomplished better by the use of two separate sutures (Figs. 2, 3 and 4). Most writers state that the temporal portion of the superior rectus is transplanted to or beneath the point of insertion of the lateral rectus; but in my experience, in order to reach this point the muscle has to be put on a tremendous stretch, and for this reason I have been in the habit of attaching it just above the insertion of the lateral rectus.

The same procedure is performed on the inferior rectus muscle. Baldwin[7] has suggested attaching the inferior tendon transplant slightly closer to the lateral rectus insertion than the superior tendon is inserted, in order to improve downward gaze, and I have found this helpful.

It is important not to split the tendon more than 10 mm. back from its detached end. The effective point of the new insertion, as was pointed out by Franscois,[6] is at the point of division of the two portions of the tendon; hence, the shorter the split, the more lateral and the more anterior is this new and effective insertion.

Final adjustment, if satisfactory abduction is not obtained, is effected by further recession or by marginal myotomy of the medial rectus. McLean[8] suggested detaching the medial rectus, identifying it with loose sutures and reattaching it as necessary several days after the transplantation operation.

Complications.—The complications of transplantation are few. Most notable is a rather prolonged postoperative reaction. Occasionally slight enophthalmos has been noted, with accompanying narrowing of the palpebral fissure, but this usually does not last for more than a few days after the operation. Temporary changes in the corneal astigmatism and folds in Descemet's membrane, apparently due to pressure of the muscles on the globe, have been reported also. Not infrequently a vertical muscle imbalance of small degree is produced; it can usually be overcome by means of vertical prisms incorporated in spectacle frames, as was necessary in the case presented.

COMMENT

The mechanism by which the operation accomplishes its purpose has been the subject of much debate. Spaeth[2] expressed the opinion that recession of the medial

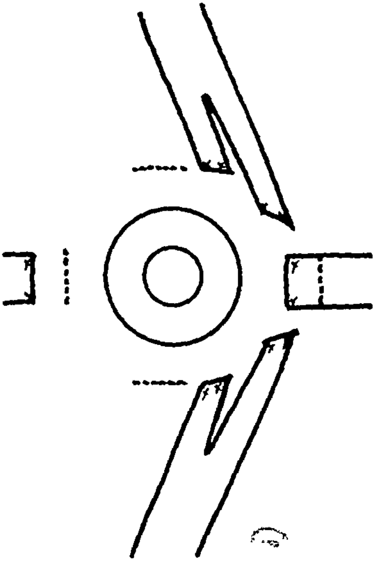

Fig. 4.—Left eye. Author's m[illegible] plantation of [illegible] and inf[illegible] medial an[illegible] s la[illegible]

grafted to a distant part than are tubed pedicles, i.e., cross-leg, abdomen-to-hand and arm-to-face. Tubes may require one or more operations to prepare them to be transferred. Expedition may be important, so that judgment is required to determine whether the end result will be better if rapidly accomplished or more critically done. It is preferable not to use cross-leg flaps for women, because of the resulting scar and the defect on the donor leg. The arm flap to the face may take fewer stages, but it may provide skin of less desirable color and texture than that obtained from the neck or cheek by multiple-stage excision with advanced or rotation flaps.

A pedicle that is attached to scar tissue or to an irradiated area and not attached at its margins to normal skin and subcutaneous tissue may "roll up" on itself, have a permanently impaired blood supply and provide a useless and unpleasing result.

Double pedicle and rotation flaps are useful for closing defects in which a flap is required or the donor area may be grafted or closed. The double pedicle graft is useful to cover the exposed tibia. The donor site, which is over soft tissue, is free grafted. An example of the rotation flap is a flap from the forehead to the nose. The donor area on the forehead can frequently be closed.

Free skin grafts are used to replace losses too large or too deep to be covered by epithelization or when closure is not possible. They are most useful for treating burns and extensive wounds. They provide temporary skin dressings and replace scars when subcutaneous tissue is not required. Usually a free split-thickness skin graft is applied as a procedure of necessity or expediency, although there are instances in which it will give the best result. The split-thickness skin graft contracts postoperatively, may become abnormally pigmented and may wrinkle. It is used for extensive wounds because it is available in large quantities. The result is a patch that may be adequate, giving the best result possible. It is frequently second or third choice but must be considered first for extensive burns on the dorsum of the hand if the tendons are not destroyed.

SUMMARY

After a brief resume of the history of skin grafting, the author mentions the various types of cutaneous graft in current use, emphasizing the fact that the ideal graft is the one that most nearly approximates the normal appearance and structure of the part to be repaired.

He also points out that careful judgment is needed to determine whether grafting is actually necessary, since many injuries can be handled successfully without it. A meticulous study of the individual patient is also needed, since important psychic considerations are frequently involved.

RIASSUNTO

Dopo una breve esposizione della storia dei trapianti cutanei, l'autore ne elenca i vari tipi sottolineando il concetto che il trapianto ideale è quello che più si avvicina, per ogni carattere, alla porzione di cute che deve sostituire.

Un altro punto importante da stabilire è se il trapianto sia realmente necessario, dacchè molte lesioni possono essere benissimo trattate senza di esso. E' necessario uno studio meticoloso di ogni singolo paziente anche dal punto di vista psicologico.

RÉSUMÉ

Après un bref résumé de l'historique de la greffe épidermique, l'auteur mentionne les divers types de greffe cutanées d'usage

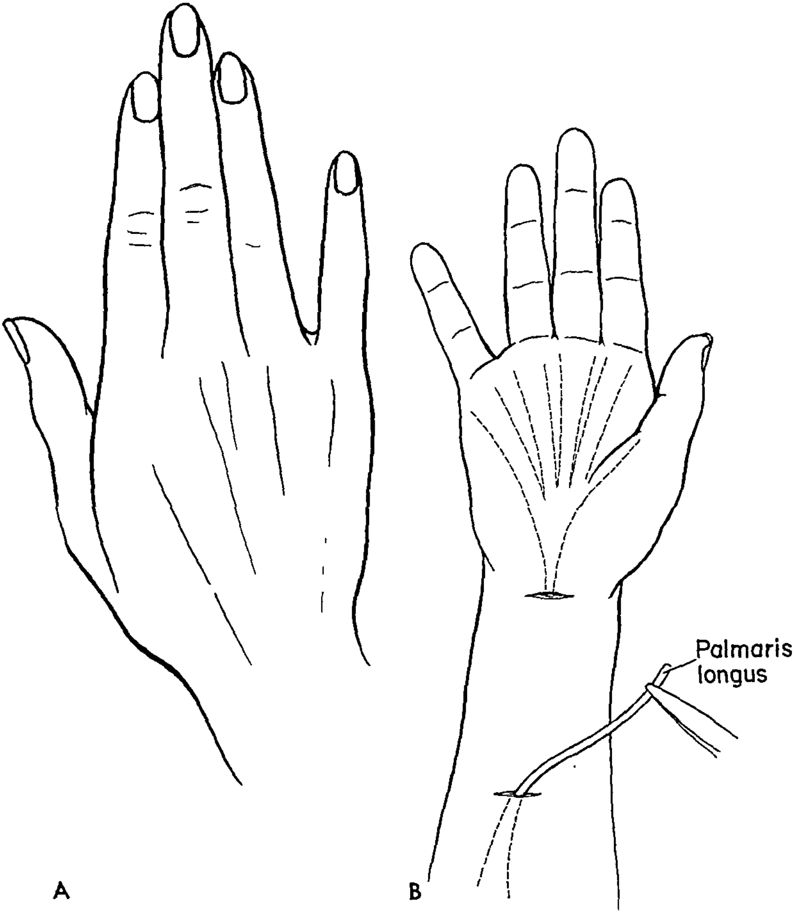

Fig. 1.—*A*, loss of ability to adduct the small finger or the ring finger; accentuated with digits held in extension. *B*, division and preparation of the palmaris longus tendon for a "free tendon graft."

tourniquet had been placed above the upper portion of the right arm. A small C-shaped incision was made over the right palm in the region of the distal palmar crease. Below the

skin, scar tissue, the netrating
injury, was encount as ex-
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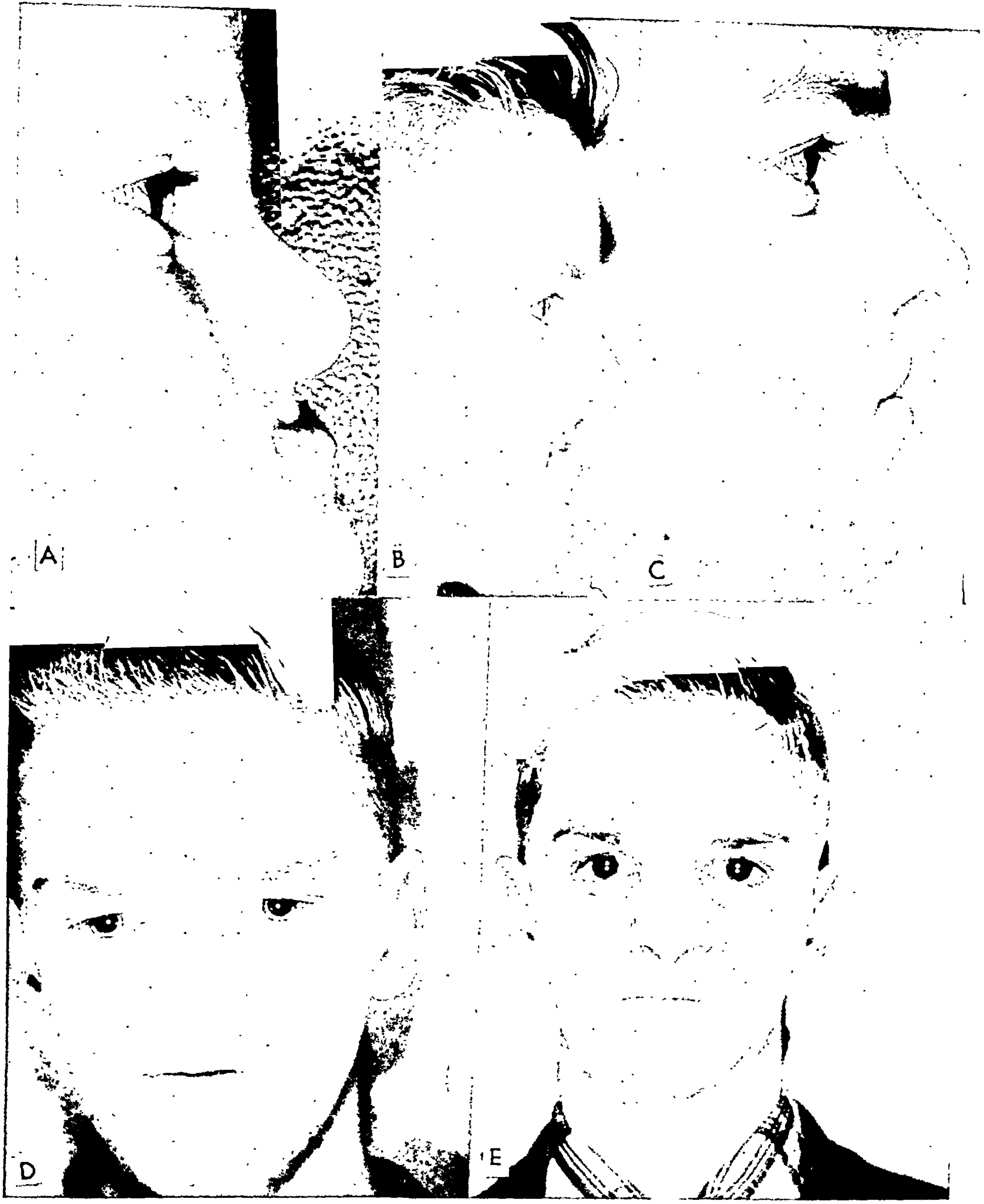

Fig. 1 (*Case 1*).—*A*, appearance of patient when first examined at clinic. Note retrusion of central third of face and prognathism. *B* and *D*, lateral and full-face views of the patient after extensive orthodontic treatment and fitting of orthodontic appliance. Note degree of improvement achieved in contour of upper lip with an orthodontic appliance. *C* and *E*, lateral and full-face views taken two months after transplantation of an iliac bone graft as described in text. Note degree of further improvement in contour of entire central third of face. This improvement can be attributed solely to the bone graft, as an orthodontic appliance is not in place in this particular case.

In the seventeenth and eighteenth centuries, Willis of England, Duverney of France and Valsalva of Italy are but a few to whom we owe so much. It was during this period that some of the earliest surgical procedures for relief of deafness were described. Paracentesis of the tympanic membrane was employed for the relief of deafness long before it was advised as a means of facilitating drainage of the middle ear. Similarly, mastoidectomy was recommended as a cure for deafness and tinnitus long before it was accepted in the treatment of mastoiditis.

The nineteenth century brought with it certain refinements in otologic knowledge. Corti emphasized histologic study and was the first to describe the cochlea in detail. It was during this period that the French, German and English schools of otolaryngology contributed so many of the great names that have become bywords. Among these must be mentioned Helmholtz, Weber, Rinne, Yearsley, Toynbee, Wilde and Politzer.

Modern Concepts of the Surgical Treatment of Deafness.—The successes attained in present-day operations for deafness are due not only to the otolaryngologic tradition of knowledge and experience but to the many advances in modern science. Refinements in audiologic testing provide greater accuracy in choosing candidates for surgical treatment; new technics in roentgenography make possible the visualization of anatomic regions and pathologic entities heretofore not recognized; the use of the magnifying loupe and the operating microscope enables the surgeon to devise technical procedures never before possible; modern chemotherapeutic agents and antibiotics help immensely in the successful completion of operations that were formerly defeated by secondary infection.

Deafness in general can be divided into four main categories: nerve deafness; conduction deafness and a combination of the two, known as mixed deafness and central deafness. Nerve deafness involves the neural elements of hearing and may occur in the end organ of hearing, in the nerve pathways to the brain or in centers in the brain itself. The deafness that occasionally follows mumps or meningitis is an example of the pure nerve type of deafness. By contrast, the hearing loss of patients with otosclerosis is a result of impairment of the sound-conducting mechanism alone and is therefore classified as conduction deafness. It is not uncommon for nerve deafness to coexist in a patient with conduction deafness (the so-called mixed deafness). This is illustrated by the patient with conduction deafness due to chronic disease of the middle ear in whom further hearing loss results from damage to the auditory nerves associated with aging. Central deafness occurs as a result of injury, disease or maldevelopment in the auditory centers of the brain itself. The clinical result is inability to perceive and recognize sound in a normal manner despite the fact that audiometric responses are apparently normal.

Accurate diagnosis of the type of deafness present is extremely important, since surgical treatment is employed only for those patients in whom disturbance of the sound-conducting mechanism is the sole or major cause of the hearing loss. At the time of writing, no known surgical procedure can restore or improve hearing in a patient with nerve deafness or central deafness. For such a patient a properly fitted hearing aid of the right type, instruction in lip reading and auditory training can do much to ameliorate the affliction.

Among the disease [illegible] ducing conduction deafness [illegible] treatment are (1 [illegible] tissue [illegible] (2) [illegible]

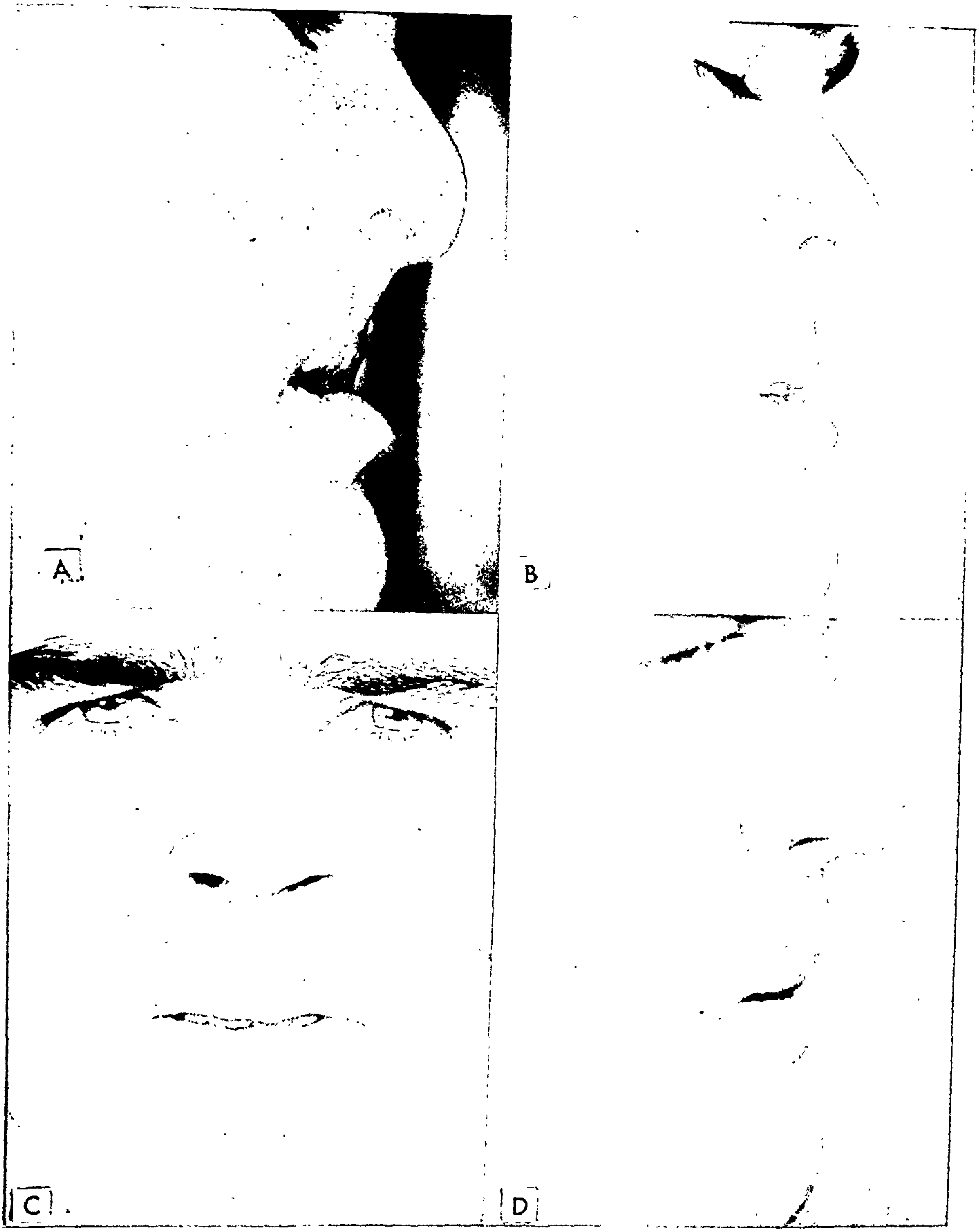

Fig. 3 (*Case 2*).—*A*, profile view of patient when first examined in clinic. Note nasal deformity, scarring of upper lip and retrusion of central third of face. In this case, premaxilla was removed during primary repair of lip. At a later date, skin of the prolabium was utilized to reconstruct columella. *B*, appearance of patient after rhinoplasty, revision of lip scars and fitting with an orthodontic appliance to restore contour to upper lip. *C* and *D*, full-face and lateral views of patient three months after transplantation of bone graft. Note further improvement in contour.

ian tube is present, however, surgical treatment of the associated atresia of the auditory canal does not improve the hearing.

Surgical correction of atresia of the auditory canal is designed to create a new auditory canal, but, because of the coexistent deformities in the middle ear, the hearing improvement brought about by this procedure alone often fails to bring the hearing up to a serviceable level.

With the addition of fenestration, performed at the same time the new auditory canal is created or later (two-stage technic), hearing levels well within serviceable range can frequently be obtained.

Because of the hazard of injury to the facial nerve in this type of operation, it is advisable that the operation be performed only when the congenital defect is bilateral.

Noncongenital bony atresia of the auditory canal is relatively infrequent. In some instances the cause is unknown; in others the condition is an aftermath of trauma. When it occurs bilaterally, the impairment in hearing may be severe. Removal of the obstructing bony growth permits the return of normal hearing (Fig. 2).

4. *Surgical Treatment of Deafness Caused by Otosclerosis.*—The present-day treatment of deafness caused by otosclerosis forms one of the brightest chapters in the entire history of otolaryngology. Although this curious and baffling disease has long been known to otolaryngologists, it is only within the past twenty-five years that operation for deafness has been successful. The following passage is translated from the writings of Valsalva, re-

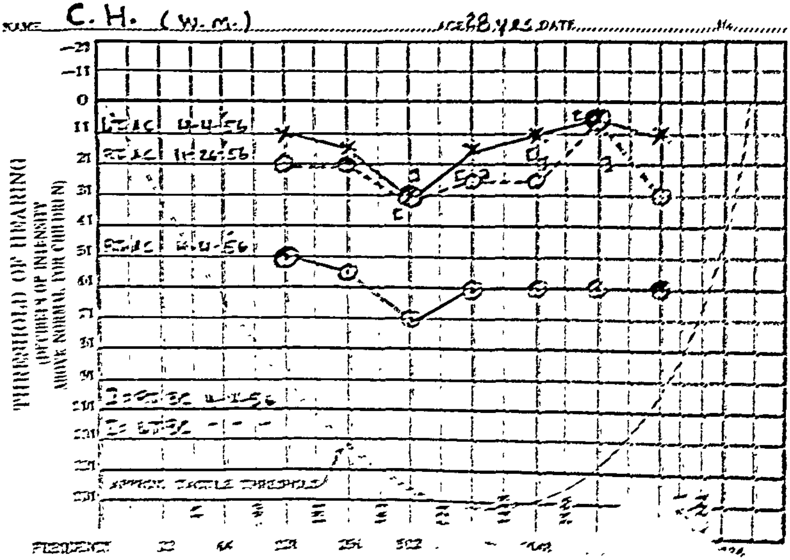

Fig. 5.—Audiogram showing improvement in [illegible]

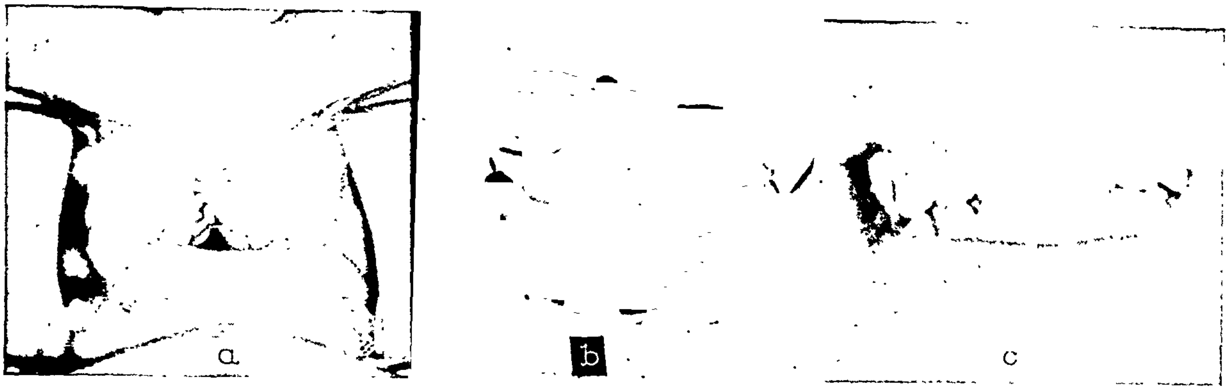

Fig. 5 (*Case 2*).—*A*, appearance of upper dental arch when first examined at clinic. There is marked collapse of alveolar segments with narrowing of entire upper dental arch, in both lateral and anteroposterior dimensions. *B*, orthodontic appliance employed in this case. *C*, appearance of patient after orthodontic treatment, extraction of teeth and upper orthodontic appliance.

of the nasal spine, and over the lateral aspects of the cheeks (Case 2, Fig. 2*B*). The bone graft must be so constructed as to provide sufficient bulk to restore the normal facial contour, and, preferably, its midportion should rest upon the nasal spine. In Case 1, dislocation of the bone graft necessitated pinning with a Kirschner wire on the eighth postoperative day. Aside from this minor complication, the postoperative course in each case was essentially uneventful.

REPORT OF CASES

CASE 1.—A 15-year-old white boy had been seen at this clinic four years earlier. Questioning revealed that he was born with a bilateral cleft palate. From the age of 2 to 4 years, four operations were performed in an attempt to close the cleft in the palate. Over the past four years, the patient had had intensive orthodontic treatment directed toward prevention of collapse of the upper alveolar segments. Examination revealed pronounced underdevelopment of the maxillae and extreme retrusion of the central third of the face. Prognathism was present. Examination of the oral cavity showed a short, scarred, immobile palate and collapse of the lateral alveolar segments. The premaxilla was surgically absent. The upper dental arch contained but two teeth.

Reconstruction was carried out by transplantation of an iliac bone graft measuring 6 by 4 by 3 cm. (See illustrations).

CASE 2.—A white man aged 21 was first examined in this clinic at the age of 16, with congenital bilateral harelip and cleft palate. The primary lip repair was carried out when he was 7 weeks old. In the primary repair of the lip the premaxilla was excised and the lip closed by a procedure that utilized both the prolabium and the lateral segments of the lip for the formation of the central portion. At the age of 2 years, the cleft in the palate was closed. Initial examination at this clinic revealed extreme underdevelopment of the maxillae, with retrusion of the central third of the face. Marked residual scarring of the lips and moderate prognathism were also in evidence. Examination of the oral cavity showed a large, anterior rhino-oral fistula and a short, scarred, immobile palate. The premaxilla was surgically absent. Severe collapse of the alveolar segments was noted. Orthodontic treatment was instituted, and the patient was fitted with an orthodontic appliance. For the past two years the patient has undergone numerous operative procedures directed at obtaining better speech and improvement in facial contour.

Surprisingly, a review of both the American and the British journals of plastic surgery indicates that little attention has been devoted to the correction of secondary deformities resulting from operations for harelip and cleft palate procedures, such as the operation here described. Ragnell[16] has reported the use of iliac bone grafts for restoration of facial contour in certain cases of "dish face" deformity. Figi[17] and others[18] have presented patients with facial deformities due to other causes, successfully treated by the

auditivo; d) otoesclerose com ancilose do estapédio.

3. O tratamento cirúrgico, utilizado para aliviar a surdez inclue: a) excisão do tecido linfóide; b) mastoidectomia conservadora ou radical com enxertos de pele; c) nos doentes com atresia formação de neocanal auditivo); d) fenestração; e) mobilização do estribo.

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Proctologic Surgery

Further Experiences with Hyaluronidase in Anorectal Surgery

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LOCAL anesthesia by perianal infiltration of procaine is probably the safest for surgical treatment of the lower part of the rectum and the anus. Except for an occasional patient who is elderly or a poor risk, however, this method has not been widely used for routine anorectal procedures because of a number of deterrents, principally (1) inadequacy and insufficient duration of anesthesia, (2) distortion of the tissues at the site of injection, (3) exquisite pain caused by the injection until the anesthetic takes effect and (4) increased risk of infection. It appeared, therefore, that some method to facilitate diffusion of the anesthetic solution in the subcutaneous tissues was necessary, not only to increase the efficiency of the local analgesia but to obviate the other undesirable factors that have limited the popularity of local anesthesia for proctologic operations.

Since 1942, when Consentino[1] and Duran-Reynals[2] first suggested the addition of hyaluronidase to local anesthetic solutions, a great deal has been learned about the pharmacologic properties and clinical uses of the substance.

The principal advantage of the use of hyaluronidase as an adjunct to local anesthesia is that the enzyme hydrolyzes hyaluronic acid ("ground substance" present in the interstices of the tissues), thus promoting rapid diffusion of the anesthetic solution. The rate of spread is proportionate to the amount of the enzyme used, and the extent is proportionate to the volume of the fluid injected.

Obviously, it is necessary to add a vasopressor to the hyaluronidase-anesthetic mixture; otherwise the solution would continue to spread, and the duration of anesthesia would be shortened.

During the past four years I have performed routine anorectal operations with the area under anesthesia, using hyaluronidase* with 1 per cent procaine. Various vasopressor drugs were employed in the anesthetic-hyaluronidase mixture; 3,4-dihydroxynorephedrine** in 5 cc. ampules of 0.1 per cent solution was found most satisfactory. (This is a local vasoconstrictor that produces less general increase in blood pressure than do other and similar compounds.)

A preliminary series of 357 patients, operated upon with local infiltration anesthesia, was described in November 1954.[3] I have continued to use the same technic routinely in my practice, and now at the time of writing, four years after initiating the method, the series totals 1,200 anorec-

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*Hyaluronidase is available as Wydase® (lyophilized stabilized solution) from Wy e U unit is equivalent to the T.

**Cobefrin® (Winthrop-St

scientific traditions, transmitted a considerable amount of surgical book-learning to the medieval worlds of Islam and Christendom. Since Paul of Aegîna lived in Egypt after the Arab conquest (641-2), his medical encyclopedia, the *Epitome*, the sixth book of which dealt with surgery, provided the world of Islam with the classic theories of Galen and the advanced surgical technics of the Alexandrians. Since Dr. Spector has dealt with these in his lecture I shall not repeat them, but merely suggest that (1) they impress modern surgeons most favorably, (2) they were taken over by the Arabs during the ensuing medieval centuries, and (3) they were followed quite faithfully in the Eastern (Byzantine) regions of Christendom, but were in large part disregarded in Western Europe.

The Arab world carried on the classic tradition with certain modifications, and eventually transmitted Graeco-Arab principles of surgery to Western Christendom. Arab civilization, the product of an imperial organization stretching from India to Spain along the principal waterways of civilization, provided a huge melting pot of ancient cultures. Along with other treatises, the works of classic physicians and surgeons, translated into Arab, Syriac or Persian, were commented on and expanded during the period following the seventh-century Arab conquests. Among the examples of constructive Arab attitudes toward subject cultures was the work of the Christian physician, Ibn Masawaih (commonly known as Mesue the Elder). Reared in Gundisapora, Persia, at about 800 A.D., he practiced, wrote and taught medicine, notably ophthalmology, in Bagdad. Thanks to the caliph's patronage, he was even supplied with apes for anatomic dissection. Jewish physicians, like Christians, flourished under the tolerant policies of the Arab Empire.

A noteworthy aspect of Arab surgery during these early centuries was its close relationship to medicine. This is exemplified by the writings and practices of physician-surgeons like the famous Avicenna, whose *Canon* won for him the title "The Arab Galen" and in its Latin translation threatened to eclipse Galen's influence in the Christian West. Of greater importance surgically was his contemporary, Abu-l-Qasim (Abulcasis), a Spanish Moslem whose *Encyclopedia of Healing* included three books on surgery which was circulated widely in the West in a separate Latin translation. Along with Avicenna, Abulcasim subordinated the surgical scalpel to the cautery iron, the use of which he treated in detail in the first of his three books on surgery; books II and III dealt with surgical instruments and operations. and orthopedics. Much of his surgical information was derived from classic sources, for example, Paul of Aegîna's *Epitome*, but he introduced many new features that were new to his day. The Latin manuscripts of his *Surgery* are noteworthy for the numerous illustrations of surgical instruments—over a hundred of them in some cases.

In summarizing the contributions of the early Arabs to surgery we venture the opinion that they were more than blind imitators of the Greeks, in that they made minor improvements in surgical instruments, suturing, ligatures, obstetrics, orthopedics and operations on eyes, *fistula in ano* and so on. On the other side of the ledger are several negative factors, most of them heritages from classic theory and practice: (1) the doctrine of humors and temperaments; the corollary thereof, (2) constant resort to bloodletting and cautery (to drain off noxious humors), and (3) a static knowledge of anatomy (dissection, restricted to animals, was even rarer than in classic times). Perhaps the least progressive of Arab influences on the West was the popularization (especially by Abulcasis and Avicenna) of astringents and cauterization. However, in spite of failings, the influence of medieval Islam on the West was predominantly progressive.

If the Arab world of the early Middle Ages fails to live up (or down) to our theme of surgical "Decline," the Christian West from about the year 500 to about 1000 is generally supposed to have de-

cuatro anos con infiltración local inducida con una mezcla de procaína, hialmo midasa y un vasopresor (3,4-dihidroxinorefedrina). Cada componente es de particular importancia para la anestesia local en cirugía proctológica.

Las características ventajosas del método incluyen: 1) técnica simple y fácil, 2) analgesia immediata y relajación de esfinteres y tejidos perianales; 3) poca ó ninguna distorsión de tejidos; 4) reducción notoria de edema perianal; 5) mas fácil identificación de planos de clivaje; 6) casi asusencia absoluta de hemorragía capilar durante la operación; 7) reducción de orina retenida; 8) ausencia de efectos indeseables; y 9) menor hospitalización después de operaciones anorrectales.

En la opinión del autor este tipo de anestesia es superior a cualquier otro para la mayoría de los procedimientos quirúrgicos en la parte inferior del recto y del ano y es preferida por los pacientes, muchos de los cuales temen los métodos que exigen anastesia espinal.

RÉSUMÉ

Un grand nombre d'opérations anorectales ont été pratiquées durant une période de quatre ans, en utilisant des infiltrations locales d'un mélange de procaine, de hyalunonidase et d'un vaso-constricteur (3,4-dihydroxynoréphédrine). Dans cette composition chaque produit présente un avantage bien défini pour l'anesthésie locale dans ce genre d'opération.

La méthode présente les avantages suivants: 1) technique simple et facile; 2) analgésie immédiate, relâchement du sphincter et des tissus péri-anaux; 3) absence de distortion tissulaire, ou distortion minime; 4) nette diminution de l'oedème péri-anal; 5) meilleure séparation des plans de clivage; 6) suppression presque complète, durant l'opération, de l'hémorragie capillaire; 7) diminution de la rétention urinaire; 8) absence de complications fâcheuses; 9) raccourcissement du temps d'hospitalisation.

Selon l'auteur, ce mode d'anesthésie est supérieur à tout autre pour la majorité des interventions portant sur la partie inférieure du rectum et sur l'anus; il est apprécié des malades, dont beaucoup appréhendent une anesthésie rachidienne.

RIASSUNTO

Negli ultimi 4 anni sono state eseguite numerose operazioni ano-retalli in anestesia locale ottenuta con una miscela di novocaina, ialuronidasi e un vasocostrittore (la 3,4-diidrossinorefedrina). In questa miscela ogni componente si dimostra particolarmente favorevole all'anestesia per la chirurgia proctologica.

Fra i vantaggi si devono annoverare (1) la facilità e la semplicità della tecnica; (2) l'analgesia immediata e il rilasciamento dello sfintere e dei tessuti perianali; (3) lo scompaginamento modesto o minimo; (4) la riduzione dell'edema perianale; (5) una soddisfacente delimitazione dei piani di clivaggio; (6) una pressochè completa cessazione del sanguinamento capillare; (7) una riduzione della ritenzione urinaria; (8) la mancanza di effetti collaterali spiacevoli e infine una diminuzione del periodo di ospedalizzazione post-operatoria.

Questo tipo di anestesia è superiore ad ogni altro, secondo l'autore, per la maggior parte degli interventi sul retto distale e sull'ano, ed è anche preferito dai pazienti molti dei quali temono l'anestesia spinale.

ZUSAMMENFASSUNG

In einem Zeitraum von vier Jahren ist eine grosse Anzahl ivon anorektalen Operationen mit örtlicher Infiltration einer Mischung von Novocain, Hyaluronidase

stress) the importance of potions, salves and supernatural intervention. Nevertheless, the existence of surgery is evidenced by numerous scattered references in both medical and nonmedical treatises. The most prominent aspect of surgery was bloodletting, an inheritance from classic times, based on the theory that noxious humors must be drained off. This practice prevailed throughout the early and late Middle Ages, also in modern times even to George Washington's day. (It is thought that excessive bleeding rather than the ailment is what killed him.) However, in the early Middle Ages, bloodletting was worse, and there was more of it, thanks to the belief that it was a "Hippocratic" remedy.

Medical handbooks of this period invariably contained treatises on bloodletting, either anonymous or attributed to Hippocrates or other classic authorities. In one of them, attributed to the Venerable Bede, but apparently compiled from various classic sources, along with advice concerning the days on which it was safe, or unsafe, to bleed or purge, is the following:

> ". . . at all times, day or night if need be, one ought to resort to bloodletting in acute fevers. . . Open the veins in the back of the neck for headache and madness, . . . two veins below the tongue for disease of the mouth or toothache, . . . two veins from above the great toe for injury of the testicles. . ."

Even less impressive, from the standpoint of general intelligence and surgery, is the following, taken from a manuscript of the late eleventh century. It asserted that bloodletting

> "contains the beginning of health, makes the mind sincere, aids the memory, purges the brain, restores the bladder, warms the marrow, opens the hearing, checks tears, removes nausea, benefits the stomach, invites digestion, evokes the voice, builds up the senses, moves the bowels, enriches sleep, removes anxiety, nourishes good health."

If medieval people believed such optimistic talk, and well they might since it was part of their classic heritage, little wonder that they resorted to boodletting not only for all sorts of specific ailments but also periodically as a general health measure. Calendars indicated lucky and unlucky days not only for bloodletting but also for purging and indulging in certain foods, drinks and pleasures. Manuscript illustrations showed, often with red spots, the places from which to draw blood.

The methods used for bloodletting were (1) puncturing a blood vessel from which the blood spurted into a jar or pan; (2) placing cupping glasses on slower flowing veins and (3) placing leeches, usually on the legs. Sometimes the results were precarious; medieval (like classic) literature contains references to dangerous swellings that sometimes ensued. Undoubtedly many a person, like George Washington, was bled to death.

Nowhere in the literature of the early Middle Ages is there any evidence to the effect that bloodletting was performed by a special class of surgical practitioners. This is of importance in the face of the almost universal opinion of our day that throughout the Middle Ages bloodletting was done by barber-surgeons. Wherever mentioned, the early bloodletters were called "medics" (*medici,* in the original Latin). To be sure, by the late eleventh century, at Chartres and some other north-French centers, there were *rasators* and *sanguinators.* These, we surmise, were similar to the barber-surgeons of later centuries.

The same situation prevailed with regard to the surgery that was of a slightly higher order than bloodletting; namely, treatment of wounds, operations, and cautery. In early Germanic law codes, regulations concerning headwounds, refer to "medics," never to surgeons *(chirurgi).* Similar evidence is found in the writings of churchmen.

A possible explanation for this terminology lies in the fact that during the early Middle Ages surgery declined almost to the vanishing point. What remained was

The night before operation a colon irrigation is given until clear fluid is returned.

The abdomen is entered by an incision approximately from the xiphoid to the umbilicus, and the abdomen is explored for metastatic carcinoma. The cecum and the right half of the colon are then mobilized, and the ileocolic and right colic arteries are occluded with bulldog clamps, care being taken to place the clamp proximal to anastomosing vessels. The ileum and the transverse portion of the colon are cleared at the point where division is to take place, and a rubber-shod clamp is placed across each to prevent bleeding through the bowel wall or the immediately adjacent vessels. If there is good circulation after fifteen minutes the right colic and ileocolic arteries are divided near their point of origin and the ileum is transected. During the waiting period an appendectomy is performed.

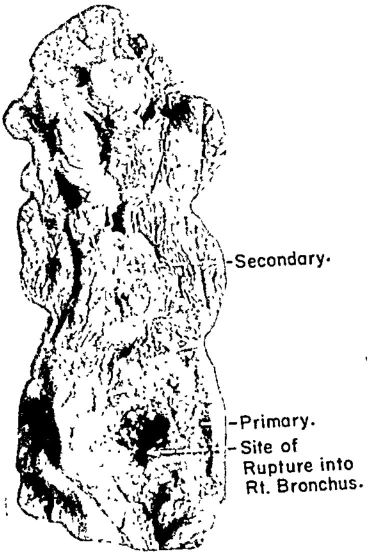

Fig. 1

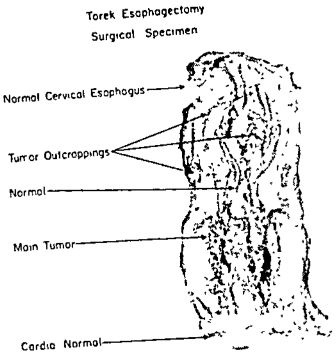

Fig. 2

The substernal tunnel is now prepared and the retrosternal space entered from above by a collar incision in the neck and from below by an incision of the sternal origin of the diaphragm at the xiphoid. The tunnel is then made by blunt dissection, largely with the finger and hand or with gauze dissectors. When the tunnel is adequate a catheter is passed downward through it, the ileal sutures fixed to it and the terminal portion of the ileum and colon drawn up into the neck. Care is taken to prevent twisting the blood vessels and tearing the mesenteric vessels by too much stretching. In my opinion it is important not to tear the pleura and have the colon lie in the free pleural space, since redundant loops could easily become caught, distended, obstructed or even gangrenous.

The esophageal stump is mobilized and the ends freshened. If sufficient length is available, the ileum is removed and an esophagocecostomy is performed. If length is lacking and viable, Professor Lynn Thorndike, an experienced, sober researcher in matters medieval is, in his own words,

> "inclined to view with some skepticism the assumption . . . that the word Salernitan represents a separate body of doctrine or of method in practice, which may be sharply distinguished from Arabic influence. Rather the medical literature and practice of Salerno is an integral and scarcely distinguishable part of *medieval medicine as a whole . . .*"

I am inclined to press this opinion a bit further, asserting that *early* medieval medicine is not "sharply distinguishable" from Salernitan medicine. Salernitan medical treatises were antedated, and probably derived from, writings of which we have extant copies in earlier North- as well as South-European manuscripts. In short, it seems that observations of the early Salernitans paralleled those of the early northerners.

To this generalization Salernitans can claim an exception if they appropriate a tenth-century Jewish physician, Donnolo, from a region about two hundred miles east of Salerno. Donnolo was born at Otranto; he traveled widely, practiced for about forty years and wrote (in Hebrew) the earliest known medieval Italian medical treatise. Thus, if we follow existing evidence, South Italy's medical "first" is found in a *civitas HEBRAICA* on the Otranto heel of the peninsula, rather than in a *civitas HIPPOCRATICA* on the Salerno shin-bone.

Neither Donnolo's treatise nor the earliest known medical products of Salerno itself are surgically unique. I refer especially to Gariopontus's *Passionarius* and Petroncellus's *Practica*, both of which I have found to be remarkably similar, in subject matter and approach, to earlier treatises from Chartres and St. Gall, both northern clerical centers. Similar evidences from other manuscript sources lead me to the conclusion that Salerno before the eleventh century was unimpressive.

There is no evidence of a university, of a medical school or of a *Civitas Hippocratica*. Documents prior to 1000 A.D. contain only brief references to a few "medics" at Salerno, and none to surgeons (*chirurgi*) or to an educational institution. The record even shows that Salerno had a *bad* reputation in northern Europe. A late-tenth-century chronicler in France wrote that in 929 at the French royal court a liberally educated French cleric-physician completely discomfited a practically trained Salernitan physician in a symposium concerning pharmacy, pharmacology, botany and surgery. When the Salernitan sought revenge by poisoning his victorious rival, he was himself out-poisoned and forced to have a foot amputated, and this by local *surgeons* (*chirurgi*). Granted that the story has a French bias, it indicates that physicians, and surgeons, were to be found outside Salerno in the tenth century; also that an Italian could be out-poisoned by a Frenchman. At least two other medieval French writers viewed Salernitanism with similar suspicion, and there are reliable modern scholars who have expressed doubts concerning Salerno's early reputation. I refer to Professors Lynn Thorndike and Paul Kristeller, and Dr. George Corner. In Dr. Corner's words:

> "We must abandon altogether the poetical view of this place as a last outpost of the true Hippocratic learning. Nothing remained here, any more than elsewhere in Europe, of undiluted antique medicine. The important thing that happened at Salernum to set it off from the rest of Italy and to make its medical school preeminent in the grand awakening of Europe, was the introduction of Oriental (i.e., *Arab*) learning, at the end of the eleventh century."

Only toward the end of the eleventh century is there evidence of a medical center at Salerno. So far as a university is concerned, there was no formal recognition of one until the fourteenth century. Equally certain is the lack of evidence that the early Salernitan medical profession included women, like Trotula. The early records contain numerous references to *clerical*-"medics" but none to *women-*

In England in the fourteenth century the term "leech" was generally applied to the members of the medical profession. They had to belong to the guild or fraternity of Barbers, and might be known as a Barber practicing surgery. There were a few learned masters of surgery. After the union of guilds in 1450, the appellation "Barber Surgeon" came into use. In German countries the barber was generally connected with baths and came to be known as Bader or Balneator. These attendants let blood, sold ointments, pulled teeth, practiced cupping and gave enemas. The monks in the monasteries who required their services for the tonsure, employed them also for blood-letting. Blood-letting was practiced periodically.

John Flint South,[3] who was twice president of the Royal College of Surgeons, compiled the earliest records of the barbers and surgeons of the city of London under the title "Memorials of the Craft of Surgery in England." This is no doubt the most authentic work on the beginnings of the barbers who were surgeons and the surgeons who were masters of surgery, their ultimate union as barber-surgeons and their final emergence as the Royal College of Surgeons.

Among the great surgeons of Europe in the fourteenth century were Lanfranc who died in 1306, de Mondeville who lived from 1260 to 1320, Guy de Chauliac, who died in 1368, and Jan Yperman, a Flemish surgeon who died in 1350.

In England John Arderne was born in 1307. D'Arcy Power,[4] in a Harveian Lecture delivered March 12, 1914, provides an interesting picture of this original surgeon who was skillful in leechcraft, a believer in spells, and the author of a manuscript on a roll of vellum, written before printing was known. The original manuscript is now in the Royal Library in Stockholm. Lanfranc, de Mondeville and de Chauliac were well educated surgeons; Arderne learned his surgery in the army. As an example of his belief in magic and spells is his treatment of epilepsy. He recommended that the words Jasper, Melchior and Balthazar be written with blood drawn from the auricular or little finger of the patient. The paper bearing the words was worn by the patient, who said daily for a month three Pater Nosters and three Ave Marias for the souls of the fathers and mothers of the three kings. For constipation Arderne wrote: "Let the man drink 'de brodii'." This was the equivalent of beef tea. However, this was not the common treatment. "If he be rich" he was to have beef tea according to Arderne, "but if he is a pauper he may just drink his own urine."

Here is an example of the surgery of John Arderne:

> "I saw a young man with a stone as big as a bean so lodged in his penis that it could not escape through its eye, neither could it be pushed back, but it remained in the middle of the organ as it is here shown. I cured him easily with an incision, for I put him on his back and tied his member with linen threads on each side of the stone to prevent its shifting, and after making a small cut with a lancet over the stone I squeezed it out. I then sutured the skin with a needle and thread over the hole, and dressed it with white of egg and finely ground flour, and having wrapped up the penis in a piece of old and thin linen I let him go in peace for three days. I cut and removed the thread at the next dressing, and in less than a fortnight I had cured him completely. There is no need for alarm in these cases, even though the urine escapes from the wound for three or four days after such an operation, for the patient will certainly be cured."

As might be expected the ignorance of anatomy and physiology displayed by the barbers and itinerant surgeons brought them frequently into conflict with the physicians and with the victims of their barbarities. In 1337, Garrison says, a strolling eye surgeon was thrown into the manuscript from a Bavarian monastery, written about 1158 and attributed to Galen. It was accompanied by human anatomic illustrations, much earlier in origin and of wide usage, extending even to Persia and China. Sudhoff and other specialists have suggested that such anatomic studies, possibly based on human as well as animal dissection and recorded in manuscript illustrations, stemmed from ancient Alexandria, whence they had spread into Asia (as far as China), into the Mediterranean region (as far as the Arabs penetrated) and eventually into North Europe. A recently excavated catacomb in Rome may throw important light on this problem. Therein is a fourth-century fresco depicting what is said (by some authorities) to be a professor of medicine and twelve disciples, viewing a dissected corpse demonstrated by a prosector.

Meanwhile, surgery proper had been keeping pace with anatomic dissection. Again, tradition has attributed to Salerno the entire credit, whereas recent manuscript researches spread the responsibility more broadly. Manuscript evidences prove that twelfth-century Italy had added to the medieval classic corpus on bloodletting, wounds and cautery certain new technics, derived from Constantine's treatises as well as from practical experience. In short, the old things were being handled more effectively, and something new was being added.

As an example I cite passages concerning the famous "soporific sponge." They prove that it was not a new discovery, but an early medieval improvement on an ancient anesthetic potion of mandragora.

As specific evidence from early medieval, pre-Salernitan North Europe, I cite two prescriptions from the period just after Charlemagne. The first is merely a medieval repetition of an ancient potion described by Dioscorides and Celsus in the first century. It is found in the medical part of a ninth-century clergyman's encyclopedia. In describing the herb, mandragora, Archbishop Rabanus Maurus wrote:

> ". . . the root mixed with wine is given for drink to those whose bodies must be cut for healing, so that asleep they will not feel the pain . . . (he added) it is comparable to the virtues of the saints . . ."

More impressive are the twin descriptions of soporific *sponges* in medical manuscripts of the ninth and tenth centuries, published by Sudhoff and Sigerist. The Latin texts are similar.

> "A hypnotic or soporific aid, for those to be healed by surgery so that, being asleep, they will not feel the pain: take seed of Thebaic opium 1 ounce, juice of mandragora leaves 8, juice of fresh hemlock with juice of hosciamus, with sufficient water to make a juice; collect the juice in a coarse dry sponge and dry it well. To use the sponge, soak and warm it, place on the nostrils so as to take away the patient's very spirit until he sleeps. To wake him, take another sponge soaked in warm vinegar, place it on the nostrils and it will end his sleep."

The twelfth-century Salernitan version, 250 years later, often hailed as a "first," is almost identical, even in wording. The same holds true for the thirteenth-century Bologna version.

Not all of the surgical evidence is so disturbing to Salerno's reputation. We quote a passage from a twelfth-century *Surgery* concerning operations of the testes. As compared with the cited case of a sixth-century excision of testes it indicates a much improved technic.

> "If the intestines descend [into the scrotum] we operate surgically as follows. The patient is placed with his feet elevated and the scrotum is cut from below so that the testicle itself appears. It is grasped in two fingers and by lifting it by the finger nails or tearing it away from the intestine itself, it is drawn toward the pubic bone and extracted. It is then sutured above with a large needle and firmly ligated with thread so that the ends of the ligature hang together

well shaped nails, cleaned of all blackness and filth. He should hear many things and speak but few, for a wise man sayeth, it seemeth more to use the eres than the tunge." He also said that "if you had been still you would have been held a philosopher . . . When he shall speak, be the word short and as much as possible fair and reasonable and without swearing."

When Henry V went to war across the channel he arranged for a physician and surgeon to accompany him. His surgeon was Thomas Morstede. The surgeon was directed to take with him twelve of his own craft. He was given the privilege of choosing those who should accompany him. Subsequently the Barbers and Surgeons Company and the Corporation of Surgeons after them were called on to choose surgeons to serve in the army and navy.

Sometime between May, 1421, and May, 1423, the College of Physicians under the control of a rector of medicine joined with the surgeons in petitioning the Aldermen for authority to improve the professional acquirements and social position of themselves and their successor. The surgeons who joined in this move were a society distinct from either the barbers or the barber surgeons and probably originated from the military surgeons. This group got authority to conduct examinations for both medicine and surgery, to assign physicians or surgeons to the poor, to visit apothecary shops and throw away bad medicines, and to make sure that anyone who claimed to have graduated in medicine could submit proof of it. By 1435 this conjoint college of physicians and surgeons seems to have disappeared and in that year regulations were established for the government of the Guild of Surgeons. Dates were established for their assembling and the choosing of the masters. The regulations included the control of foreign physicians, the taking of cases, of apprentices, and many other types of regulation. An oath was created which was to be taken by each member.

The masters in surgery up to this time had not made any fusion with the barber surgeons. In the year 1452 the Guild of Barbers in the city of London obtained a

Manuscript of *De Arte P* *ia*
of Master John A

Italy and France than in the Salerno region.

In many lines of intellectual and artistic evolution, it is said that Italy has been the dynamic force for progress in northern Europe. This is obvious in the case of medieval surgery, and it is North Italy that does it. Bologna, like Salerno, a university whose origins are "veiled in impenetrable obscurity," was a flourishing medical center before the thirteenth century, but its earliest known surgeons were from that century. There was Hugh of Lucca who learned much as a military surgeon on crusading expeditions, his surgeon son Theodoric, a Dominican friar who became a bishop, and William of Saliceto, the greatest of the early surgeons of Bologna. He probably introduced a number of improvements, like the suturing of severed nerves, the differentiation of arterial (spurting) blood from venous blood and a return to reliance on the knife instead of on the excessive cauterization recommended in Arab medicine. Other North-Italian centers, Padua, for example, attracted and produced noteworthy physicians and surgeons, among them Bruno of Longoburgo, Salerno-born and educated, but a practitioner in Padua and Verona. He was one of the all too small number of surgeons who advocated the aseptic, nonsuppurating treatment of wounds.

If one compares the dates of thirteenth-century Italian and French surgeons, he will find that French progress was about a half-century behind that of North Italy, just as North Italy lagged behind South Italy. Another noteworthy fact is that French progress was inspired by North-Italian *emigres*. For example, the first outstanding surgeon in France was Lanfranc of Milan, a pupil of Saliceto, the Bologna professor. Lanfranc, banished from Milan for political reasons, migrated to France, eventually settling in Paris. Being married he was ineligible to teach in the clerically controlled university. However, he attained almost immediate success by reason of his intelligent operational methods and his treatise on surgery. Becoming a member of a newly established surgeons' guild—the Confraternity of St. Cosmas—he helped to establish the reputation of the profession. This was an important development in French surgery.

Some years earlier the educated surgeons of Paris, considering themselves superior to the barber-surgeons, had organized a guild, which eventually became the Confraternity of St. Cosmas. About the year 1300, the guild was given official recognition, and eventually became the rallying point for French surgeons in their successful efforts to keep barber-surgeons in their place, as "Surgeons of the *Short* Robe," while attaining for themselves, as "Surgeons of the *Long* Robe," a position comparable to that of the physicians.

Lanfranc not only contributed to the rise of the surgical profession in France, but is credited with having checked prevailing excesses and defects in trepanation and in operations for cataract, stone and hernia, (for which he urged the use of trusses). He also made moderate use of cautery, (which had been discredited by certain Bologna surgeons). Another example of his intelligent conservatism was his opposition to the current tendency to leave bloodletting and minor operations to the barber-surgeons. He upheld the unity of medicine and surgery as coordinate parts of the healing art.

Contemporary with Lanfranc was another of Saliceto's pupils, Henry of Mondeville. Norman born, he had received his basic surgical training at Bologna, later studying and teaching at Montpellier and Paris. Along with a younger contemporary, Guy of Chauliac (d. 1368), who also studied at Bologna, he brought French surgery and anatomic knowledge to a level comparable with that of Italy. With them medicine, surgery and anatomy formed a healing trinity. Chauliac expressed the necessary inter-relationship of surgery and anatomy when he wrote: "the surgeon who is ignorant of anatomy carves the human body as a blind man carves wood." With him the evolution of Italian anatomic dissection culminated, and cap-of the books during 1638 and 1639 showed that the books were well bound and fastened by clasps to an iron chain so that they could not be removed. Eventually the properties of the predecessors passed to the Royal College of Surgeons although most of the books seem to have been lost. When the Royal College of Surgeons was established it had at first a governing body which included the Master, the Wardens and the Court of Assistants. These titles had been evolved from the earlier groups. In 1308 there were only Masters. In 1416 the Guild of Barbers had Masters and Wardens. The titles had been inherited from the Surgeons' Company which in turn took them from the United Company of Barbers and Surgeons and they took them from the Barbers' Company established in 1462. The paraphernalia of office coming down from the past included the Mace and the three-cornered hat. The mace is still symbolic and one was sent by the Royal College of Surgeons to the American College of Surgeons and was carried in the procession of that august body when it was organized in 1913.

In 1529 Ambroise Paré came from the provinces to Paris. He was at that time a rural barber's apprentice. His father was a valet and barber, his brother-in-law, Gaspard Martin, a master barber-surgeon in Paris. Soon after coming to Paris he obtained the position of resident in the largest hospital in Paris, the Hotel Dieu. He was then 19 years old. Sometime later he wrote:

> "I was resident the space of three years in the hospital of Paris, where I had the means to see and learn diverse works of chirurgery, upon divers diseases, together with the anatomy, upon a great number of dead bodies, as oftentimes I have sufficiently made trial publicly in the physicians' school at Paris, and my good luck hath made me see much more."

The French surgeon owed improvements in his social condition to the fistula of Louis XIV and its successful treatment by Felix. Felix and his successor Mareschal were made royal surgeons. In 1724 Mareschal obtained from Louis XV the creation of five chairs of surgical instruction at St. Come. The Paris medical faculty revolted, marched in procession to St. Come and harangued against the surgeons. The mass of the people sided with the surgeons. Then in 1731 the Academy of Surgery was founded and in 1743 Louis XV promulgated an ordinance which delivered the surgeons from further association with the barbers and wig makers, who were forbidden to practice. The ordinance further declared that no one could be a master in surgery without being a master of the arts. The Academy of Surgery was abolished in 1792 during the French Revolution. In 1794 a new edict broke down any distinction between physicians and surgeons as separate guilds and practice was thrown open to everybody who could pay for a license. In 1803 examinations and diplomas were revived and a controlled scientific profession was on its way to its present dignified state.

In England separation of the surgeons from the barbers occurred in 1745. The surgeons were elected as masters, governors and the Commonality of the Arts and Science of Surgeons of London. The surgeons left to the barbers the hall, the library, and the silver.

Properly at this point comes a reference to the place of anatomy in the apprenticeship served by the young men who became surgeons. In 1540 the guild of surgeons which had always taught its members and apprentices by lectures got an act providing them with bodies for dissection:

> That the sayd *maysters or gouernour'* of the mistery and comminaltie of barbours and surgeons of London, and their successours yerely for euer after their said
> crecions at their [illegible] e and plea [illegible]
> shal and maie [illegible] out [illegible]
> traction foure [illegible] i

clean, and avoiding suppuration and frequent changes of dressings. His major contribution to surgery was the operation for *fistula in ano*, which he based on Abulcasis's Arab technics modified in accordance with his own experience, as is evidenced by the numerous illustrations and case histories included in his treatise. Noteworthy in the many extant manuscripts of his work are the sketches and explanations of the instruments used in the operation. Another of his well illustrated works, *The Art of Medicine and Surgery*, has attained recent fame by reason of an early-fifteenth-century copy, found in Stockholm and containing many brilliantly colored illustrations, in unusual scroll form. This manuscript may have been sent to Scandinavia for an English princess who was queen of these realms until 1439. It is merely one of the rarer examples of the wide range of transmission of medieval and surgical knowledge, and of its prevalence in marginal regions of the West that are often neglected in historical surveys. May I, then, end my presentation with the reminder that I have omitted much concerning medieval surgery, not only because of shortage of time, but also because of the shortage of modern knowledge of what our forebears in various parts of Europe knew about surgery.

[Professor MacKinney showed 50 projection slides, all color reproductions of medical miniatures from medieval manuscripts, to illustrate bloodletting, cautery, famous medieval surgeons, surgical clinics, surgical operations—on heads, arms, legs, chest, abdomen, sexual organs, fistula, cesarean sections and so on—postoperative treatment, orthopedics and dentistry. These slides were merely a sampling of the surgical section of Professor MacKinney's collection of about 3,000 photographic reproductions of medieval medical miniatures, obtained in the principal manuscript centers of Western Europe. The collection also comprises miniatures concerning pharmacy, materia medica, anatomy, pathology, gynecology, balneology, medical education, medical instruments and veterinary science.]

> You ask, if I would agree to live my seventy or rather seventy-three years over again? To which I say, yea I think, with you, that it is a good world on the whole; that it has been framed on a principle of benevolence, and more pleasure than pain dealt out to us. There are, indeed (who might say nay) gloomy and hypochondriac minds, inhabitants of diseased bodies, disgusted with the present and despairing of the future: always counting that the worst will happen, because it may happen. To these I say, how much pain have cost us the evils which have never happened!
>
> —*Jefferson*

must be themselves physicians with a training above that of physicians generally. The problems of greed, ignorance, quackery, and inhumanity which troubled the master surgeons and the guilds still remain, and if they are ever to be solved by social controls, the surgical organizations will have to solve them.

—Morris Fishbein,
M.D., F.I.C.S. (Hon.)
Chicago, Illinois

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Simplicity in Medical Writing

THERE has always been a need for the concise and simply written medical paper. This, however, is not as simple as it seems, because the moment the physician puts pen to paper he is no longer the plain-spoken, kindly practitioner of the art of medicine, but an entirely different person. He becomes ultrascientific and on occasion may find himself in a miasmic labyrinth of gobbledygook. Chesterton's advice—"To write simply is the essence of good English"—is easily forgotten.

It is not necessary to begin with the statement that the subject is interesting. It is up to the writer to prove that. It is best to begin with a brief statement as to what it is all about, and then get on with the subject matter.

Historical asides should be brief and not put in the introduction. Several paragraphs farther on, if the reader is tiring, a well written, compact bit of history may stimulate his interest.

The observation that the scientific knowledge of the ancients was obscure has no place. Everyone knows that, and no apology need be made for men of bygone ages, who in some respects were better observers than the physicians of today. They possessed the virtue of presenting their thoughts briefly and clearly.

Bibliographic [illegible] always dreary furniture. It [illegible] the

Pye's Surgical Handicraft. Edited by Hamilton Bailey. Bristol: John Wright & Sons, Ltd., 1956. 17th ed. Pp. 800, with 860 illustrations.

Students and readers of the surgical literature have long been accustomed to expect from the pen of Mr. Hamilton Bailey, whether he wields it as author or as editor, only the best. The seventeenth edition of *Pye's Surgical Handicraft* will not disappoint them. "When I assumed the editorship in 1938," he writes in his Introduction, "I went about my task in a way of which I believe Mr. Pye would have approved; I inquired from House Surgeons and Practitioners what they wanted to find in a book of this character. I have continued this policy, but so vast is the horizon of surgery today compared with that of sixty years ago that without the specialized help of the contributors it would have been impossible for me to have continued to provide what Mr. Pye provided—a practical handbook suited to the need of the reader."

Mr. Bailey has now edited eight editions of his surgical classics, and even with competent contributors it must have been a colossal task. Covering as it does the entire and enormous field of surgery, it must have posed a problem in organization alone.

As always, the work is lavishly illustrated, with a number of the remarkably true-to-life color plates for which Mr. Bailey is famous. The index is excellent.

It would be impossible in the space available to mention all of the thirty-nine chapters by title; moreover, since the volume is exactly what its original author called it, a manual of surgical "handicraft," there is no need to do so: first, because most readers are entirely familiar with former editions, and second, because the emphasis has been rightly placed on method and technic rather than theory. The new edition brings the material strictly up to date; the chapters on fluid and electrolyte balance, anesthesia and antibiotic therapy are excellent. One of the most praiseworthy features of the book is the inclusion of practical guidance not directly associated with surgical technic: surgeon-patient and surgeon-nurse relations, hospital administration, certification of death, etc.

Apparent on every page are the patience and exactitude of genuine scholarship. No words are wasted; every sentence is to the point, a fact that reflects great credit on the editor. Nor is any passage in the least unclear; an intelligent layman could read the book and enjoy it—and unquestionably learn a great deal from it, too.

When a book has been a classic in its field for many years, the responsibility of periodic revision, expansion and addition is no light one. At first glance it may seem unkind to wish Mr. Bailey long continuance in so onerous a charge, but that is the penalty of doing a task magnificently. The personal modesty and scientific detachment with which Mr. Bailey has set himself to preserving the original author's spirit and intention does him great honor.

M. T.

Bases Physiologiques de la Chirurgie Neuro-Vasculaire. By C. Mentha. Paris: Masson et Cie, 1956. Pp. 148, with 32 illustrations.

This is a scholarly and well-organized treatise that considers especially problems concerning the sympathetic innervation of the extremities and the head and neck. There is little emphasis on the innervation of the thoracic, abdominal and pelvic viscera. What is known about the cerebral control of visceral functions is thoroughly discussed, and considerable attention is paid to pharmacologic reactions.

The author is especially concerned with the problems of vasomotor control and has developed a concept of "mutual assistance of vascular territories" that he uses to explain some of the failures of sympathectomy and some of its complications. According to this concept, any hyperemia provoked in a vascular territory necessarily entails compensa-

Le Traitement Chirurgical des Hernies de l'Aine chez l'Adulte (The Surgical Treatment of Inguinal Hernia in the Adult). By Henri Fruchaud. Paris: G. Doin et Cie, 1956. Pp. 386, with 210 illustrations.

Prof. Fruchaud points out that the Bassini operation, including its various modifications, is followed by recurrence in 2 per cent of cases of indirect inguinal hernia and 14 per cent of cases of direct inguinal hernia. The percentage of recurrence is highest in patients over 25 years of age (10-15 per cent from 25 to 35 and 30 to 40 per cent after 45).

The book is divided into five parts. Part 1 is a critique of the Bassini operation and its numerous modifications (Zimmerman, Andrews, Berger-Halsted). The author states that hernias cause distortion of the deeper structures of the inguinal canal. He points out that current operations limited to repair of the inguinal canal and rings, and even corrective operations, are insufficient. He describes the technic he has devised for total reconstruction of the inguinal region.

Part 2 is devoted to troublesome complications of herniotomy: (1) infection of the wound, which delays healing, favors recurrence of hernia and results in an ugly scar, and which can be prevented by rigid asepsis and careful handling of tissues, and (2) cellulitis and phlebitis resulting in testicular infarct and embolus formation. These can be prevented by careful dissection without trauma to the deeper vessels and resection of the sac without removal of the part adherent to the cord. Operative repair should be performed so as to assure sound healing.

Part 3 describes the technic of the author's operations designated as 1 and 2. The first two stages are the same for the two procedures and consist of: (1) adequate exposure of the inguinal region and (2) careful dissection, mobilization of the cord and correction of the peritoneal defect. The third stage consists of reconstruction of the abdominal wall with two rows of sutures—one superficial and one deep—below the cord, uniting Cooper's ligament and the deep transversalis and external oblique fascia and thus obliterating Hesselback's triangle. In some instances it is difficult to utilize the transversalis fascia because of its insufficient length. This defect is overcome by inserting a layer of nylon mesh and suturing its inferior border to Cooper's ligament, thereby reinforcing the transversalis fascia. Nonabsorbable sutures are employed throughout, i.e., silk, linen, cotton or stainless wire.

Part 4 deals with operations designated as 3 and 4, devised for simplified reconstruction of the inguinal canal in debilitated old men, and women, and by the technic used for repair of femoral hernia.

Part 5 is a correlation of the author's results after operations 1 and 2. There have been no recurrences in 200 herniotomies, 30 of which were performed as long as four years ago. One-third of the patients were between the ages of 40 and 75 years; 35 presented recurrent hernias; 11 had massive hernias adherent to the large intestine. The author attributes success to his technic, which obliterates the offending funnel-shaped peritoneal depression, thus reinforcing the lower abdominal wall. The repaired peritoneum forms a solid resistant plane that does not bulge upon coughing and prevents the recurrence of hernia.

The book is, in short, a full presentation of the author's perfected technics for herniotomy. It has 210 illustrations by Arnold Moreau and an extensive bibliography of over 500 references. Surgeons interested in herniotomy will find much helpful information in this volume.

CHARLES PIERRE MATHÉ, M.D.

Synopsis of Gastroenterology. By R. Schindler. New York and London: Grune and Stratton, 1957. Pp. 395.

The *Synopsis of Gastroenterology* was written specifically for the general practitioner and the internist. The intern and resident will also find much of practical value in it

IMPORTANT ANNOUNCEMENT

Contributors of scientific articles for publication in The Journal of the International College of Surgeons from Europe, the Near East and the Middle East should send their articles to:

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Les auteurs d'articles scientifiques destinés à être publiés dans le Journal du Collège international de chirurgiens sont priés d'adresser leurs articles à l'adresse suivante pour l'Europe, le Proche et le Moyen Orient.

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Un comité a été nommé pour l'examen des articles à paraître. Les auteurs sont priés de joindre à leur travail de brefs résumés en français, anglais, allemand, espagnol, italien et portugais si possible.

am 1. HWK and 15 Kg. am 7. HWK).

The application remains unsuccessful if there has been immediate flaccid paralysis, or if there is priapism, which, among other symptoms, - indicates total severing of the cerebral portion of the spinal cord. The method has also proved successful with pathologic luxation of the atlas and, exceptionally, with compression of the vertebral portion of the spinal cord associated with severe scoliosis, with fractures of the lumbar portion of the spine and with spondylitis tuberculosa, particularly when employed in preparation for surgical intervention.

Lindemann (M 540) expressed the opinion that *juvenile kyphosis* is associated with a developmental disturbance in the chorda and therefore, with dysostosis enchodralis. After extensive roentgenologic and histologic investigations, Reske (M 489) attributed an essential significance to the paravertebral tissue shadow in the development of scoliosis. That shadowy outline, in his opinion, is caused by inflammatory and reactive changes in the retro-aortal subpleural connective or adipose tissue in connection with the pleura, and represents an active and passive force hampering growth.

Wilhelm (M 221) discussed the possibility of intrauterine epiphyseal damage to the vertebral column caused by anomalies of position and by oligohydramnios in connection with prenatal disorders. He advocated early treatment by means of a posterior shell or gymnastics. In the opinion of Felix (M 446), attempts at removal, alleviation or elimination of scoliosis by rib plastic precedures are abortive, according to postoperative examination, since it is impossible to compensate for the torsion. He predicted improvement from a combination of those interventions with use of spans of the vertebral column by the Lange method. Scheuer reported (M 48) 4 cases of scoliotic paralyses due to a transverse lesion, which he was able to cure respectively by conservative treatment and laminectomy respectively. The paralyses occurred at the time of greatest development. This observation supports Lange's demand for surgical intervention in cases of progressive scoliosis.

According to Weil (G 1129), sciatica in many cases is the result of pressure damage to the nerve cells within the vertebral canal. Medial prolapse of the root produces sciatic scoliosis on the opposite side. In cases of scoliosis with lateral prolapse the vertebral column is averted to the side of the prolapse (representation of distance). For operation on the *prolapsed lumbar disc*, Schroder (A 1785) recommended peridural anesthesia (eleventh and twelfth thoracic for soft tissue and fifth lumbar-first sacral for the nerve roots). The ligamentum flavum should always be fenestrated to provide enough room for the roots. Only loose or disconnected segments of disc tissue should be removed.

According to Penholz (D 120), the results of surgical intervention are the better the more exactly the loose and disconnected tissue is removed. Various methods are employed in the use of contrast media in the vertebral canal to diagnose prolapse of a disc. Stirnweis (C 120) expressed the opinion that scout films suffice for diagnosis and for determining the level of the prolapse. Kloss (B 91) recommended functional myelographic study because it delineates also labile prolapse, he believes as well, in his opinion. Reinhard (O 809) and Koberg (O 236) recommended abrodil for myelographic study. Panter, in collaboration with Reinhardt, wrote a special treatise on the contrast method as applied to the spinal sac and its variants, e.g., discographic and peridurographic study. Decker (F 1691) emphasized the fact that suboccipital gas myelographic study with elevation of the pelvis offers excellent possibilities for diagnosis of tumors of the spine and prolapse of the discs, agreeing with Pia (O 170) as to the simplicity and safety of this method. If there is reason for suspecting a tumor, Reinhardt, too, has expressed preference for gas myelographic study.

Lower Extremities.—Hohmann (G 54) pointed out that many failures in the treatment of the so-called *congenital hip luxation* are due to belated treatment. He insists on early treatment combined with rotation osteotomy later. According to Penners (R 393), this luxation can be diagnosed within the first four weeks, because the Perrin-Ferraton disease appears whenever the hip

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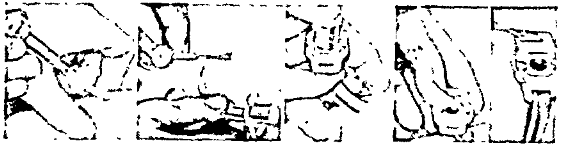

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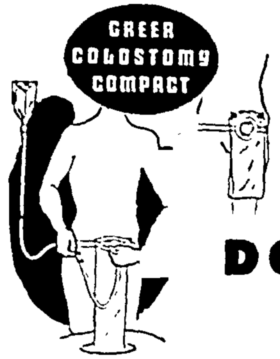

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cent. Different methods of treatment are (1) conservative treatment with withholding of food (Dörfler); (2) conservative treatment with provision of food (Meulengracht), and (3) radical resection (Finsterer).

Schwarz (A 449) *reported on* late results after *gastric resection*, with anterior and posterior anastomosis. Of the 170 resections, 50 per cent included anterior and 50 per cent posterior gastroenterostomy. The two methods produced identical results.

Ulitsch (A 745) explained his position in cases of total and "enlarged total" gastric extirpation and the duration of survival for patients operated on with this technic. He strongly urged total gastrectomy in all cases of scirrhus, carcinoma fibrosum and linitis plastica, pointing out that the abdominal approach is almost always sufficient. As anastomosis the esophagojejunostomy is adequate. For a high lying carcinoma of the cardia he recommended approach through the two cavities. With regard to the period of survival, the progress is still poor.

Nakayama (C 266) presented an estimate of the *different operative technics* for total gastrectomy, taking into account his own 260 cases. His conclusions were as follows:

1. The direct esophagoduostomy is practicable only if there is no great occlusion at the point of anastomosis. Sustaining sutures have to be applied between the diaphragm and the head of the pancreas. With this technic the mortality rate amounts to 2.2 per cent.

2. The interposition of different intestinal loops between the esophagus and the duodenal stump is technically difficult and means an additional operative burden for the patient. It is the best method, however, for the physiologic mechanism of digestion, because the transplanted loop takes over the stomach's function and the passage through the duodenum remains open. The mortality rate of this method is zero.

3. In esophagojejunostomy the passage of chyle through the duodenum is eliminated, which is disadvantageous to digestion. With this technic the mortality rate is 2 per cent. Sustaining sutures have always to be applied for the purpose of unburdening the anastomosis. Suturing of the anastomosis must be performed in two layers. Postoperative complaints of difficulty in swallowing are due to scar strictures or relapses. Scar strictures are present with esophagoduodenostomy in 43 per cent of cases; with esophagojejunostomy, in 31.8 per cent and in operations done by joining intestinal loops, only 11.1 per cent.

After presenting indications for total extirpation of the stomach, Nakayama (C 277) described his own method. He resects the pancreas at the crossing point of the medial colic artery, simultaneously cleaning the celiac lymph nodes.

He investigates beforehand the possibility of operation by means of transperitoneal splenovenographic studies. Stenosis and passive congestion of the splenic vein prove the carcinoma inoperable (irruption into the retroperitoneal region). The mortality rate associated with this method is 2.05 per cent.

To avoid rapid evacuation after total gastric resection, Mandl (P 403) performs two Braun's anastomoses, one located behind the other, below the esophagojejunostomy. Rainer *and Zollner (D 371) observed 59 cases of* anemia after total gastrectomy. They recommended treatment by administration of vitamin B_{12} and iron.

For carcinoma of the fundus with extension in the direction of the cardia and for genuine cardial carcinoma, Holle and Heinrich (C 164) advocated the two-cavity operation according to *Lewis Ivor*, with esophagoantrostomy. They approach by their own method, however, an isolated tumor in the fundal area, i.e. They resect the superior gastric segment and perform a subdiaphragmatic esophagoantrostomosis. The same is true of an ulcer near the cardia. Subdiaphragmatic fundectomy is performed by abdominal removal of the superior gastric segment and the establishment of an end-to-end anastomosis between the intra-abdominal portion of the esophagus and the remainder of the pyloric segment. In order to insure adequacy of the anastomosis, the esophageal rami of the left gastric artery and the left caudal phrenic artery must be preserved at all costs. The blood supply of the esophagus, coming from below, extends as far as 3 cm. above the diaphragm.

LOUIS PASTEU

with a glance at the pathophysiologic aspects of the subject. According to the world medical literature,' the average mortality rate is 8.6 per cent.

Peritonitis as a cause of death has declined sharply. Among 800 operations performed by Block on the extrahepatic bile ducts, the mortality rate for men was 80 per cent and for women 12.1 per cent. Before operation, functional tests of the liver and kidneys must be made, since the hepato-renal syndrome may occur. Block described the clinical picture of that syndrome and of diseases in which hepatic damage is in the front rank: hepatic crisis, hepatic coma, hepatargy and other conditions are included in the hepatorenal syndrome. Disturbances of function of the extrahepatic bile ducts, the so-called dyskinesia: nervi splanchnici increase the tonus and motility of the bile ducts, while the vagus acts in the opposite manner. There is confusion as to whether the sphincter of Oddi in the gallbladder neck (Lütgens) acts synergistically or antagonistically. After cholecystectomy, irritability of the sphincter of Oddi may persist. Block refuses to operate on the vegetative nervous system in case of dyskinesia of the bile ducts, recommending a procaine block from the ninth to tenth thoracic level on the right side.

Contrary to this opinion, Rosenauer (D 864) recommended that in such cases both splanchnic branches be severed below the diaphragm either retroperitoneally or transpleurally, according to Kux. One must be sure, however, that there is only a functional syndrome. Psychogenic disturbances must be excluded.

Hess (D 857) pointed out that postoperative complaints after cholecystectomy are often caused by gastritis, ulcers and colitis.

In the presence of colic and bile stasis, however, there are usually changes in the bile duct system. Their causes may be detected by intraoperative cholangiographic study, which is also recommended by Wulff (D 877).

In patients with such complaints Hess (D 857) observed stones in the bile ducts in 27.5 per cent of the cases; stenosing papillitis in 37.5 per cent; chronic pancreatitis in 10 per cent; stenosis caused by scars in 12.5 per cent, and hepatic stenosis in 50 per cent. Papillitis was present in 59 per cent of all cases of cholelithiasis.

Hilgenfeldt (D 877), pointing out that operative cholangiographic study is not always possible in small hospitals, recommended the insertion of a T drain into the choledochus and a postoperative cholangiographic study of the area above the T drain.

Fischer (D 810) maintained that *stone formation* in the choledochus is possible only in cases of choledochus stenosis. With stones present in the deep bile ducts, icterus is facultative in only 60 to 75 per cent of the cases. A careful anamnesis should be taken, as well as a roentgenogram of the bile ducts with a contrast medium.

A suspected stone in the choledochus is sufficient cause for operation, but the choledochus should be opened only if there is a true indication, and a blocking stone in the cystic duct is no contraindication. According to the literature, stones in the choledochus are overlooked in 20 to 68 per cent of operations on the gallbladder.

Opening of the choledochus is imperative if (1) there are palpable stones in the choledochus; (2) there is a history of icterus or cholangitis; (3) the choledochus is dilated; (4) if small gallstones are present; (5) the ductal system is enlarged and extended and the gallbladder contracted, or (6) puncture of the choledochus reveals opacity or sandlike bile.

Fischer mentioned the value of operative cholangiographic study, which, among other advantages, makes it possible to determine the number of gallstones present. After the stones have been removed from the bile ducts with a stone spoon, palpation by probing and irrigation should be done and a new roentgenogram taken. Stones wedged in the papilla rarely call for the transduodenal splitting thereof.

Fischer (D 810) recommended choledochus drainage by T drain according to Kehr. Loss of fluid bile can be avoided (Mollowitz, D 877) by inserting an additional plastic cannula into the duodenum.

Löffler and Spohn (D 877

LOUIS PAST

roentgen radium therapy. But only resection of the tumor offers a certain chance for curing.

With 97 esophageal operations from 1947 to 1954, Decker, Hahn, and Saegesser (U 1, 17) encountered a mortality rate of 40 per cent. They consider the operation advisable solely for cardia carcinoma, but prefer roentgen therapy in cases of genuine esophageal carcinoma. They calculated a survival of only two and two thirds months for their patients from 1939 to 1949, if they had been treated merely with gastrostomy and irradiation.

Wurnig (D 504) examined his material on 198 carcinomas, both of the esophagus and of the cardia, for mention of previous diseases that may have produced carcinoma. Among these he listed traction diverticula, lye stenosis, esophagitis with cardiospasm and the "short esophagus displacement" of the cardia into the thorax. Hiatus hernia was not included. In his opinion the origin of a cardial carcinoma as a result of a hiatus hernia is unlikely.

According to Krauss and Betke (F 465 and F 491), there is only one esophageal malformation among 1,000 to 2,000 deliveries. The most frequent is atresia, with a blind stump and a fistula stretching from the lower segment to the trachea at the level of bifurcation (carcinoma in 90 per cent of all cases). Of 12 patients operated on for esophageal deformities, only 4 could be saved. Wachsmuth (Z 209) demonstrated by color film at a meeting of German surgeons in 1955 his technic for the surgical treatment of atresia of the esophagus.

Denecke (Z 209) reported on the treatment of esophageal stenosis in an infant, 10 months old. The condition had developed after surgical removal of a congenitally atresia esophagus.

The use of bougies for such stenosis is rendered more difficult by prestenotic diverticula, and there is danger of perforation. Denecke, therefore, recommended continuous treatment with bougies, the bougie being left in the esophagus for some time. In this way the scar tissue becomes softened and is able to tolerate further dilation without trouble. This treatment should be applied only clinically.

For more exact treatment of organic or functional strictures of the esophagus, Donner and Teschendorf (Y 202) recommended the use of gelatine capsules filled with barium pap. They are of different sizes for better testing the capacity of the stenotic organ. Capsules that come to a dead stop dissolve, and in this way the passage becomes free again very soon. The authors considered the procedure highly valuable because the capsules measure esophageal lumen correctly and, in this way, clearly point to the correct treatment.

Vogel and Jacobsen (Z 214) reported their experiences in dividing the diverticulum threshold according to Mosher. Of 34 patients, each with an esophageal diverticulum, four-fifths showed improvement when reexamined. In one-fifth there was no change. No dangerous accidents, either operative or postoperative, have been observed. According to the authors, the success of endoscopic splitting of the diverticulum almost equals that of extirpation.

Nissen (H 941) called attention to the fact that complaints of dysphagia do not necessarily bear a direct proportion to the size of the diverticulum. If one examines the anamnesis in a case of small diverticula, one notes that dysphagia antedates considerably the proof supplied by roentgen and endoscopic studies. Consequently, Nissen assumed that abnormal contraction reactions of the muscles have a part in the development of the ailment and that it is even likely that they are responsible for its developing.

Ott reported the bridging of an esophageal stricture by utilizing a pulsating diverticulum of the esophagus.

Peter (A 245) reported an unusually large leiomyoma of the esophagus, thus adding another to the 46 cases known to have been reported in the world literature. The tumor measured 10 by 5 by 5 cm.

Schütz (A 1877) observed a case of dysontogenetic cyst of the esophagus, located in the lower segment. It was possible to extirpate the cyst from the muscularis without opening the mucosa. Such cysts are among the rarest esophageal tumors; only 9 cases have been reported.

the most prominent local surgeons. In addition, they are treated with lavish hospitality and kindness, so that, profitable as the courses are from the professional point of view, the serious work and study are repeatedly lightened by the most delightful social activities.

We also take full cognizance of the crying need for student exchange between our country and others. In this direction our Woman's Auxiliary is proving itself invaluable in raising funds to provide scholarships for this exchange. As a result of these devoted women's endeavors, a number of splendid young men have already been placed to great advantage.

Nor is this all that the College has done to prove title! The International Surgeons' Hall of Fame and the School of the History of Surgery and Allied Sciences, both now soundly established in Chicago and in full operation, extend educational opportunities not only to surgeons and surgical students but to the lay public, through regular historical lectures and scientific exhibits. No charge is made for these privileges; both the College Home and the Hall of Fame keep open house at all times.

All in all, then, I believe my dear friend Dr. Crotti would agree with me that we have done very much in the comparatively short span of existence of the College to further the dissemination of learning. Every year we encounter new opportunities for service, not always exclusively in education; we meet them cordially always, and lend our aid and countenance to as many as possible. The College as a college, however, comes first. Not only the growth of our great organization but the devotion it inspires in Fellows from all of the many affiliated nations is proof that Dr. Crotti's counsel was wise. In the last analysis, nothing is so exciting or so gratifying as teaching, unless it is learning! From time immemorial the association of the instructed and the instructor, the speaker and the discussant, the demonstrator and the observer, has had an adventurous quality all its own. Even though nothing spectacular may occur as a result, every participant has been warmed and stimulated to fresh effort; and at any moment the old miracle may happen again—a spark from one mind, quite unconsciously emitted, may kindle another mind to the flame that is greatness.

PROF. DR. GEORG ERNST KONJETZNY

The sorrowful news reaches us, as we go to press, that Prof. Dr. Georg Ernst Konjetzny, F.I.C.S., of Hamburg, Germany, a dear friend and a distinguished colleague, passed away on February 10 of this year. Prof. Konjetzny was Director Emeritus of the Surgical University Clinic of Hamburg and Eppendorf. To his bereaved family and friends, both the Journal and the International College of Surgeons extend the warmest and most heartfelt sympathy.

Zenker (D 509) performed 17 resections for bilateral processes after irreversible collapse measures. · On patient died; postoperative complications occurred in 3 cases. Zenker emphasized the fact that this relatively unfavorable result was conditioned by the preceding collapse therapy. For this reason he insisted on more careful and detailed reflection with regard to resection before surgical collapse therapy is undertaken.

Brunner (U 177) reported on his surgical treatment of *bronchiectases* (111 resections with 3 deaths). He observed no bronchial insufficiency, but there were several cases of alveolar insufficiency after segmental resection. Reexamination showed that it is not the hyperextension of healthy lung parts, but *the remaining presence of diseased parts, that* causes postoperative ectasia. Postoperative sputum containing pus is, according to him, a hint that bronchiectasia is still present and calls for further resection. According to Brunner, adolescence is the most favorable time for resection. For bilateral disease he first resects the more severely diseased side.

Strahlberger and Wenzel (U 160) reported the results obtained in 34 patients operated on for bronchiectasia. The operations were done four to eight years ago. The result was determined by the possibility of complete recovery from the initial disease.

Patients with diffuse bronchiectasia permitting only incomplete resection showed only transitory improvement. The functional late result was dependent upon the loss of parenchyma. After lobectomy there was no fundamental change in ventilation capacity. On the other hand, after more extensive resection there were signs of functional hyperextension of the rest parenchyma.

In patients below the age of 50 the condition of the remaining parenchyma was satisfactory. In older patients there was an increased tendency to emphysema.

Reitter (D 520) reported on the surgical problem of the so-called "chronic pneumonia." He applied that expression to the terminal stage of unresolved pneumonia, calling the changes that accompany other pulmonary diseases "secondary pneumonia" and noting, as causes, stenosis and ectasia of the bronchial tree, pulmonary cirrhosis or fibrosis following roentgen treatment, the inhalation of *certain gases and changes occurring after* severe trauma. To these he added genuine pulmonary gangrene. He operated on 60 of 74 patients, with a mortality rate of 13 per cent. The cause of death in almost every case was failure of circulation.

Difficulties present themselves in diagnosis as well as in technic and postoperative treatment. The last-mentioned is made difficult by the fact that patients with chronic pneumonia have usually been treated with antibiotics for a long time, which has made the organisms resistant.

Geissendorfer (D 496) reported his experience in the treatment of 500 patients suffering with carcinoma of the lung. The anamnesis ranged between five and ten months. Of a total of 37.8 per cent of operable tumors, only 8 per cent could be treated by palliative operations. Among 48 carcinomas of the middle lobe, only 2 were operable. The rate of early mortality after pneumectomy was 22.6 per cent. Eleven per cent of the resections resulted in cure for five years. (The decisive point is to reach the two-year line.) Operative results with undifferentiated carcinoma were discouraging. Postoperative roentgen treatment in the cases observed failed to confirm the choice of treatment in 63 per cent.

Salzer (D 501) reported on 911 bronchial carcinomas. In 375 cases only an exploratory thoracotomy could be performed. Salzer rejects palliative operations. Twenty-three per cent of the reexamined patients remained cured for four years. The prognosis was surprisingly poor in cases of peripheral carcinoma among his patients.

Becker and Knote (U 67) reported on the fate of inoperable bronchial carcinomas, which depends fundamentally upon the type of the tumor. Of a total of 84 patients who underwent thoracotomy, 23 died. The average survival time was six months. Thoracotomy did not produce accelerated growth of the tumor. The average survival for clinically inoperable patients was about six months. Eleven patients refused operation. They lived another six and a half months. Of 147 the most prominent local surgeons. In addition, they are treated with lavish hospitality and kindness, so that, profitable as the courses are from the professional point of view, the serious work and study are repeatedly lightened by the most delightful social activities.

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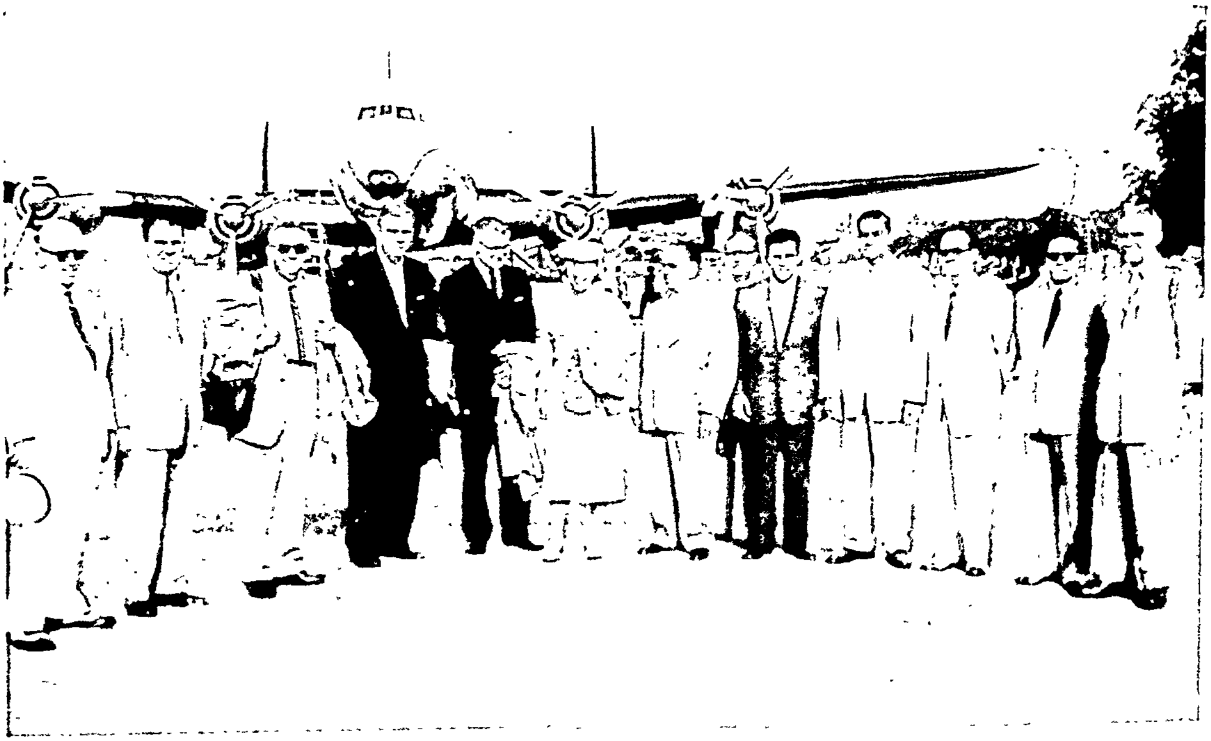
"So evident was this feeling of the Dominican doctors, that it stimulated a desire on the part of the author and his associate to give in return all the information of which they were capable. To be able to perform the first successful cardiotomy for the medical staff of the oldest university in the Western Hemisphere was a thrill never to be forgotten."

In setting up the program it was decided that our visiting surgeons would go to Santo Domingo on alternate weeks, for a continuous program would put too much pressure upon the teaching staff of the University.

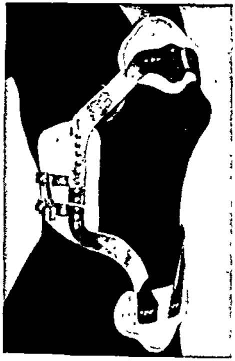
The second series was conducted by Drs. Gershom J. Thompson and M. Leopold Brodny. The pattern they followed was that of the thoracic surgeon. So many patients presented themselves, however, that it was found necessary to extend the urologic surgical sessions to four days of the week. Again the operations were televised, giving the citizens of Santo Domingo an opportunity to see this phase.

Three evenings of this week were used for lectures at the medical school. The attendance was excellent, and the interest shown was remarkable. Patients from all over the Island came for consultation. It was the custom of Drs. Thompson and Brodny to see these patients and then refer them to well-qualified Dominican surgeons who could carry out the definitive treatment. The comment of these surgeons was most enthusiastic: "Three of the evenings we gave lectures at the Medical School. They were well attended, and the question period after each session was most interesting. Three of the mornings *after our surgery, we conducted clinics to* which patients from all parts of the country were referred. The cases were diversified and intriguing."

The third week of the course was given to plastic surgery. Dr. Maxwell Maltz and Dr. Stanleigh Tausand, both of New York City, conducted the work of this week. Doctor Maltz has been Professor of Plastic Surgery at the University of Santo Do-



Arrival in Trujillo City, Santo Domingo. Dr. Gershom Thompson, F.A.C.S., F.I.C.S., D.A.B., of the Mayo Clinic, with his son, as well as Dr. Max Brodny, F.A.C.S., F.I.C.S., D.A.B., accompanied by Mrs. Brodny, are in the group.



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At the end of October, Drs. James W. Watts and Harold C. Voris offered a graduate course in neurologic surgery. "The interest in neurosurgical problems in Santo Domingo," Doctor Watts subsequently wrote, "proved great; and there is a marked need for a neurosurgeon in the country. The visiting surgeons were greatly flattered by the number of consultations they were asked to make each day. Arrangements had been made for them to see a good many patients, but the newspaper publicity brought other persons to the hospital without prior appointment, and they simply waited until they were seen, even if it were a day or two later."

Drs. Watts and Voris believe that the Santo Domingo Surgical Symposium filled a great need, as was evidenced by the interest and enthusiasm with which it was received. The program was well organized and was carried out most ably in Santo Domingo under the direction of Dr. Eduardo A. Alverez. Said Doctor Watts, "Similar symposia should be inaugurated in other countries which can be benefited by such teaching programs, such interchange of knowledge being one of the best means available to further the ideals of the College."

The neurosurgeons were followed by Drs. Edward Compere and Anthony F. DePalma—orthopedic surgeons. The volume of surgical work accomplished by these men was remarkable. So great was the demand that they felt it was necessary to make every day a surgical day. They, too, reported a most gratifying teaching experience.

Taking part in this symposium in the last week of November was one of the great surgeons of the world, Dr. Alexander Brunschwig, with his assistant Dr. William W. Daniel. A number of lectures were given on the surgical problem of cancer of the uterus, after which surgical demonstrations of the treatment of early cancer and the surgical treatment of hepatic neoplasms were given. Dr. Brunschwig gave an interesting lecture on the physiology of the human pancreas, as taught by radical operation for pancreatic cancer. Films were shown on this subject. A motion picture on pelvic exenteration and a short film on right hepatic lobectomy were also shown. Dr. Brunschwig did two operations on television, both for cancer, one cancer of the pelvis and the other cancer of the cecum.

The interest in Dr. Brunschwig's work was intense. Because of the seriousness of the operations performed, Dr. Daniel remained the following week to assist in the postoperative care of the patients. Dr. Brunschwig's comment at the conclusion of his report was, "This activity of the International College is surely one of the best things that could happen. I would urge that similar activities be considered in the future. This will increase the prestige of the College."

During the final week of lectures and demonstrations (December 10 through 15) Drs. Raymond McNealy and Arnold Jackson journeyed to Santo Domingo, where they met with Drs. Maltz and Tausand and myself. Dr. McNealy performed several operations in the general surgical field, teaching demonstrations on television. Dr. Jackson did several goiter operations, in addition to giving several lectures to the senior class of the medical school.

Drs. Maltz and Tausand performed many plastic operations, some being follow-ups on those done in early October. The results were excellent.

It was my privilege to present, at a special lecture on Wednesday night, December 12, the latest information on the status of atomic medicine. This created a great deal of interest among the doctors of the country, as well as the prominent educators. Santo Domingo expects to construct in the near future an atomic reactor. This government expects to make use of this energy for peacetime purposes and hopes to be in a position to make use of it in all the fields of medicine.

The President of the University, Dr. Diaz Ordáñez, gave a most interesting discussion of the results of the surgical symposium. Much had been gained, he said,

WHO'S WHO IN THE INTERNATIONAL COLLEGE OF SURGEONS

Dr. Everett P. Coleman, F.A.C.S., F.I.C.S., who was recently elected President of the Western Surgical Association, one of the most important surgical organizations in the United States, was born in Canton, Illinois, on Sept. 10, 1891. His parents were Dr. James Edmund and Nettie (Porter) Coleman, both of whom were members of old pioneer families.

After his graduation from the College of Medicine of the University of Illinois, Dr. Coleman served his internship in Cook County Hospital. He then spent more than two years in the service of the United States Army with the rank of Captain in the Medical Corps. One year of his military service was dedicated to work in Evacuation Hospital No. 4 in France.

Dr. Coleman is the author of a number of articles on abdominal surgery, and is a member of the following organizations: Fulton County Medical Society, Past President; Illinois State Medical Society, President from 1944 to 1946 and for two years Chairman of the Council; American Medical Association, Mississippi Valley Medical Society, President in 1940; Western Surgical Association, elected President for the 1957 term; American Association for the Surgery of Trauma; American Goiter Society; American Association of Railway Surgeons; Central States' Society of Industrial Medicine and Surgery; American Association of Industrial Physicians and Surgeons; Association of Military Surgeons; Illinois Surgical Society, President in 1956; and Pan Pacific Surgical Association.

Dr. Coleman is a Fellow of the American College of Surgeons and of the International College of Surgeons. He is a member of the World Medical Association and the Pan Pacific Surgical Association. He is a Diplomate of the American Board of Surgery and a member of the Founders' Group. He is a member of the House of Delegates of the American Medical Association and has served as a member of its Committee for the Care of the Indigent. For several years he was Chairman of the Illinois State Medical Society Advisory Committee to the Illinois Public Aid Commission and to the Medical Advisory Committee of the United Mine Workers' Welfare and Retirement Fund.

He is a member of the Canton (Illinois) Rotary Club and its Past President. He also belongs to the Masons, the Shrine and the Elks. He also holds membership in the Canton Country Club, Wee Ma Tuk Hills Country Club, Creve Coeur Club of Peoria, International Club of Chicago and the University Club of Chicago.

Dr. Coleman is co-founder of the Cole-

Dr. Everett P. Coleman, F.A.C.S., F.I.C.S.

man Clinic in Canton, and President of the staff of the Graham Hospital of the same city. He was married to Gladys Huff, of Atlanta, Illinois, in 1917. Their two children are Eleanor Irene Coleman of New York City and Louise (Coleman) Scott, wife of Senator Albert Scott of Canton, Illinois.

LEGAL ADVISERS OF THE INTERNATIONAL COLLEGE OF SURGEONS

Mr. Alvin Edelman, attorney and counselor, the newly appointed legal adviser of the International College of Surgeons, is a forty-year-old Chicagoan. He received his preliminary education in the Chicago Public Schools and then attended Northwestern University in Evanston, Illinois, graduating with the degree of a Bachelor of Science in Law. He was a member of the Northwestern University Debating Team; was elected to Pi Eta Sigma, and to Phi Beta Kappa, the honorary scholastic fraternity. He was active in Inter-Fraternity Council work.

He studied law in the Northwestern University School of Law, from which he received the degree of Bachelor of Laws. He was Associate Editor of the *Illinois Law Review*, now known as the *Northwestern Law Review*. He is the author of a number of articles on law published in different legal periodicals.

Mr. Edelman is an active member of the Chicago Bar Association, serving most recently as a member of the Committee on Inquiry and the Committee on Medical Legal Relations. He has served as President of Tau Epsilon Rho, International Law Fraternity Alumni Association, and is a Past President of the Phi Epsilon Pi Fraternity Alumni Association. He is a member of the American Bar Association.

Mr. Edelman is Past Master of Isaac Cutter Lodge No. 1073, A.F. & A.M., a thirty-second degree Mason and a member of Medinah Shrine. He is a member of the Elks, holding an Honorary Life Membership, and last spring completed his term in office as Exalted Ruler of Chicago Lodge No. 4, B.P.O. Elks.

He served in the United States Coast Guard Auxiliary as District Legal Officer for the Ninth United States Coast Guard Auxiliary District, and is presently Commander of Flotilla 22-8. He is active in a number of civic organizations, and has for several years served as Chairman of Zone 2 of the Lawyers' Division of the American National Red Cross.

Mr. Edelman is married and has three children, and is a resident of Glencoe, Illinois.

Mr. Roland Steiner, Advocate of the Geneva Bar, was recently appointed as the legal representative for the International College of Surgeons in Europe. Mr. Steiner was born in Geneva, Switzerland, on Jan. 1, 1918. His elementary and secondary education was secured in the city of his birth, where he had a scientific and classic training, graduating in 1936.

Mr. Steiner then entered the University of Geneva, where he pursued his studies in law. He earned a degree in law in 1942. He took graduate training at the University of Neuchâtel, in Switzerland, where he concentrated on the study of the economic and business sciences, in which he was awarded a degree in these subjects in 1943 and in law in 1944.

From the beginning of 1945 until the summer of 1946, he served in Paris as an official delegate of the International Red Cross Committee. Since the autumn of 1946, Mr. Steiner has been practicing law in Geneva.

POSTGRADUATE COURSES GIVEN UNDER THE AUSPICES OF THE INTERNATIONAL COLLEGE OF SURGEONS

Bordeaux, France

A **Special Course in Urology** will be given by **Prof. Raymond Darget**, F.I.C.S., of the University of Bordeaux from June 3 to June 8, 1957, at the Hôpital du Tondu, Bordeaux. The course will be conducted in two sections.

- **Section 1** will consider the treatment of malignant tumors of the bladder, and will include radium therapy and such palliative measures as denervation of the bladder and ureter, and ureterointestinal anastomosis.
- **Section 2** will center around the treatment of malignant prostatic tumors and the discussion of radium therapy and the perineal and ischiorectal implantation of radium needles.

The course will include operations, demonstrations, films, work on cadavers, lectures and case illustrations. The number of participants who can be accommodated is strictly limited. For additional information, interested persons are urged to write promptly to:

Collège International de Chirurgiens
17, rue Casteja
Bordeaux, France

Paris, France

An advanced course in **Surgery of the Hand** is offered by **Dr. Marc Iselin**, F.I.C.S., Maison Départementale de Nanterre, 403, Avenue de la Republique, Nanterre, Paris (Seine), France, in May 1957. Only twenty applicants are accepted for any single course, and only surgeons are permitted to register. The course is offered two times annually, in the spring and in the autumn.

This course consists of eleven lectures, three operative sessions, demonstrated by television, and three clinical sessions with a presentation of illustrative cases. Each afternoon the participants may gain additional experience in operations on cadavers. A certificate of attendance is issued. The fee for the course is 40,000 French francs (approximately $115 in United States currency). Surgeons from many parts of the world have taken advantage of these courses. Those interested in taking advantage of this opportunity for graduate work should direct their inquiries to:

Dr. Marc Iselin
Maison Départementale de Nanterre
403 Avenue de la République
Nanterre, Paris (Seine), France

Barcelona, Spain

The second advanced course in **Surgery of the Digestive Tract**, limited to graduate students, will be conducted under the auspices of the International College of Surgeons at the Hospital de la Santa Cruz de San Pablo of Barcelona, Spain, under the leadership of **Dr. José Soler-Roig**, F.I.C.S., Director of the hospital.

Collaborating in the teaching program will be Drs. N. Lloret, F. Amoros, C. Ortoll, J. Montaner, P. Arque, A. Sitges, A. Modolell, M. Miserachs, A. Moliner, L. Torre Eleizegui, J. Jou and J. Raventos.

The course, devoted to theory and practice, is designed for graduate students with less than five years of professional practice. Only 15 students can be accommodated in the period of study beginning January 15 and ending May 15, 1957. Participating students will be considered as assistants of the Service and will be obliged to comply with the work schedule of the Service, which consists of:

9:00-9:30 Interpretation and comment on clinical cases

9:30-12:00 Practice in rooms, dispensaries, etc., on a rotation basis

In operating room sessions the students will be instructed in surgical technics applied to diseases of the digestive tract and will participate in operations under the direction of professors

12:00-1:00 Development of theoretic lessons

To secure a Certificate of Accreditation for Advanced Work, the following prerequisites are essential:

1. Continuity of attendance
2. Demonstration of surgical aptitude, judged by the Director and Professors of the course
3. Advance payment of a registration fee of 500 pesetas, to cover teaching expenses

A contest will be held for two places for a year's residency in the Service for a year, starting January 15, 1957. The residents will receive room and maintenance in the Hospital and will present a work which can be rewarded by a medal.

For information, write immediately to:

Muy Iltre, Administracion del Hospital
Avenida de San Antonio Maria Claret, 167,
Barcelona, Spain

Vienna, Austria

Postgraduate courses in a number of different fields of surgery are offered annually at the University of Vienna. Information about the courses to be offered in 1957 and about enrollment in such graduate work may be secured by writing to:

Dr. M. Arthur Kline
Secretary, American Medical Society of Vienna
11 Universitätsstrasse
Vienna, Austria

Seminar Congress

The American Medical Society of Vienna

The annual Seminar Congress of the American Medical Society of Vienna, with which the International College of Surgeons is closely allied, is now available. Those interested in attending the Seminar Congress are requested to write to the American Medical Society of Vienna, Universitaetsstrasse 11, Vienna 1, Austria, for details and registration.

Chicago, Illinois

Course in Laryngology and Bronchoesophagology

Offered by

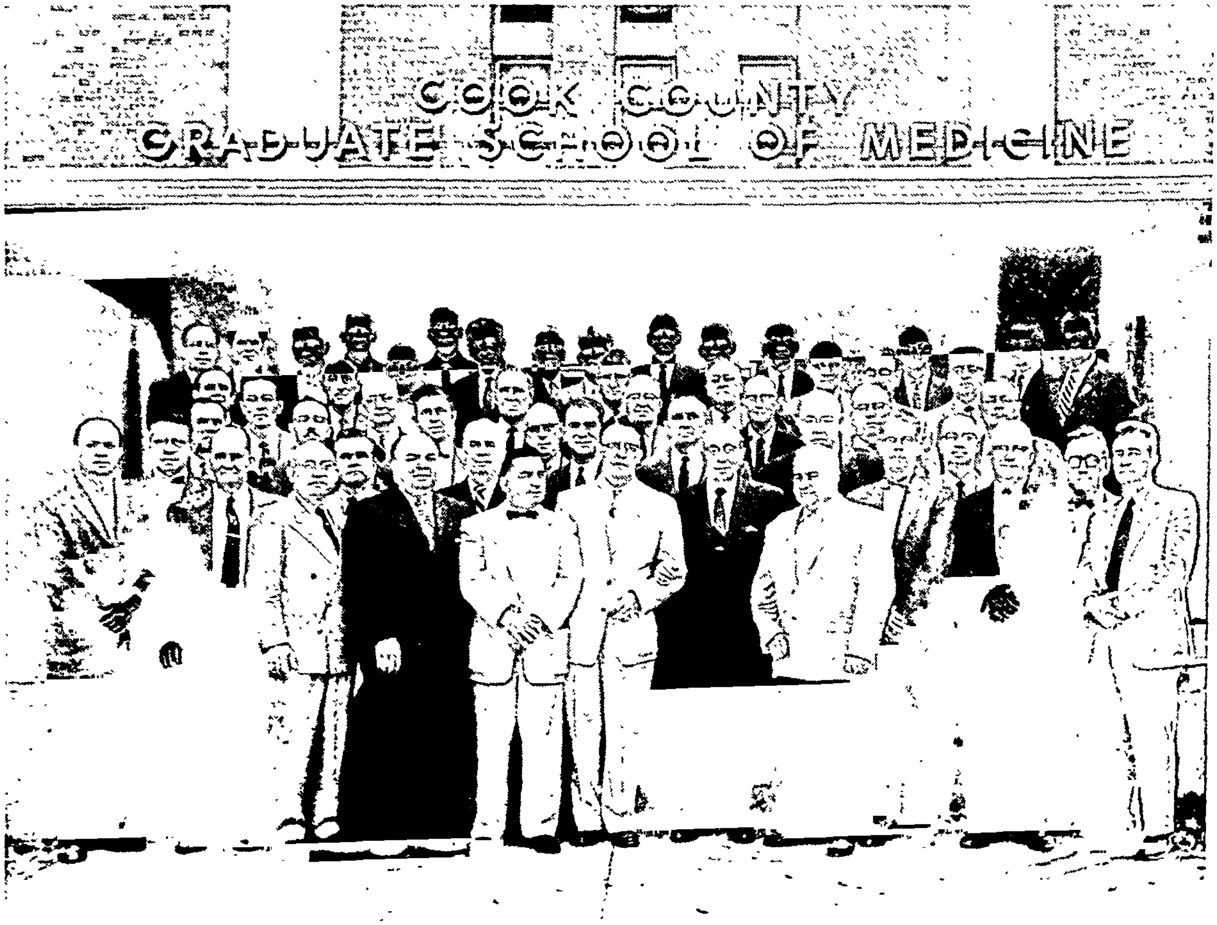
SCHOOL OF MEDICINE, UNIVERSITY OF ILLINOIS

The next Course in Laryngology and Bronchoesophagology to be given by the University of Illinois College of Medicine is scheduled for Nov. 4 to 16, 1957. The course is under the direction of Dr. Paul H. Holinger.

Interested registrants will please write directly to the **Department of Otolaryngology, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12, Illinois.**

COOK COUNTY GRADUATE SCHOOL OF MEDICINE

Part-time postgraduate courses are presented by the Cook County Graduate School of Medicine in the spring months of 1957. For details, see announcement on p. 34.



Participants in the Special Postgraduate Course given at the Cook County Graduate School of Medicine and Cook County Hospital under the sponsorship of the International College of Surgeons. The course was given immediately after the Annual Congress of the United States and Canadian Sections, held in Chicago Sept. 9-13, 1956.

MALPRACTICE LIABILITY INSURANCE

International College of Surgeons

In view of the many inquires that have been received for more specific information about the malpractice liability insurance, offered by the International College of Surgeons, through Lloyd's of London, we are summarizing the information that appears on the certificate of insurance.

The Underwriters at Lloyd's, London, agree subject to the provisions contained in the certificate to indemnify each member of the International College of Surgeons named on the schedule of insured persons for any and all sums which the insured person shall by law become liable to pay in respect of professional services rendered, or which should have been rendered, by the insured person or nurses or technicians employed by the insured person, or any other person (except partners, unless specifically endorsed on the certificate) resulting from any claim or suit based solely upon error, negligence or mistake committed during the period of the insurance.

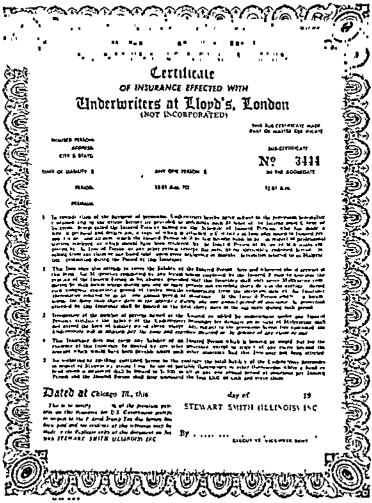
The insurance also extends to cover the liability of the insured person for malpractice (as defined in the preceding paragraph) by any locum-tenens employed by the insured person to continue the practice of the insured person in his absence, provided that this insurance shall only cover malpractice committed by such locum-tenens during any one or more periods not exceeding thirty days in the aggregate during each consecutive period of twelve months commencing from the inception date of this insurance. If the insured person employs a locum-tenens for more than thirty days in the aggregate during any one annual period of insurance the protection afforded by this insurance shall be limited to the first thirty days in the aggregate during such period.

Irrespective of the number of persons named as the assured or added by endorsement under one insured person's certificate the liability of the underwriters for damages on account of malpractice shall not exceed the limit of liability stated earlier, except that, subject to the provisions contained on the certificate, the underwriters will in addition pay the costs and expenses incurred in the defense of any claim or suit.

This insurance does not cover any liability of an insured person which is insured or would, but for the existence of this insurance, be insured by any other insurance, except in respect of any excess beyond the amount which would have been payable under such other insurance had this insurance not been effected.

Notwithstanding anything contained in the certificate to the contrary the total liability of the underwriters in respect to malpractice arising from the use of portable fluoroscopes or other fluoroscopes where a hand or head screen is employed shall be limited to $2,500 in all in any one annual period of insurance per insured person, and the insured person shall bear uninsured the first $500 of each and every claim.

No liability shall attach to the underwriters in respect of (a) criminal acts, or services rendered while under the influence of intoxicants or drugs; (b) contact lenses, and (c) the performance of or the recommendation of any operation to produce sterility unless the insured person shall be able to establish pathologic indications for such operation.



Certificate

OF INSURANCE EFFECTED WITH

Underwriters at Lloyd's, London

(NOT INCORPORATED)

SUB-CERTIFICATE

No 3444

IN THE AGGREGATE

Dated at Chicago Ill., this day of 19

STEWART SMITH (ILLINOIS) INC

By

Facsimile of certificate of malpractice liability insurance effected with Lloyd's of London.

The underwriters will defend in the name of and on behalf of the insured person any claim or suit alleging malpractice as insured in the certificate and will pay the costs and expenses incurred in the defense. The underwriters shall not settle any claim without the consent of the insured person. If, however, the insured person shall refuse to consent to any settlement recommended by the underwriters and shall elect to contest or continue any legal proceedings in connection with such claim, then the liability of the underwriters for the claim shall not exceed the amount for which the claim could have been so settled plus the costs and expenses incurred with their consent up to the date of such refusal.

If a payment in excess of the amount of indemnity available under this insurance has to be made to dispose of a claim, the liability of the underwriters for the costs and expenses incurred with their consent shall be such proportion thereof as the amount of indemnity available under this insurance bears to the amount paid to dispose of the claim.

It is a condition precedent to the right of the insured person to be indemnified under this insurance (a) that the insured person shall give to the underwriters immediate notice in writing of the receipt of any claim made or of his becoming aware of any occurrence which may subsequently give rise to a claim; (b) that the insured person shall give to the underwriters such information and assistance as the underwriters may reasonably require and as may be in the insured person's power to give and will assist in the defense without charge to the underwriters, and (c) that the insured person shall not admit liability for or settle any claim or incur any costs or expenses in connection therewith without the written consent of the underwriters.

The insured person shall endeavor to notify the underwriters before testifying at any inquest or public hearing in any case in which the insured person has been in attendance or consultation.

All notices and communications to the underwriters shall be delivered to Stewart, Smoth (Illinois) Inc., 141 West Jackson Blvd., Chicago 4, Illinois, the delivery to whom of any such notice or communication shall be deemed to constitute receipt thereof by the underwriters.

It is agreed that in the event of the failure of the underwriters to pay any amount claimed to be due, the underwriters, at the request of the assured and/or insured person, will submit to the jurisdiction of any court of competent jurisdiction within the United States and will comply with all requirements necessary to give such court jurisdiction and all matters arising shall be determined in accordance with the law and practice of such court.

It is further agreed that service of process in such suit be made upon Mendes & Mount, 27 William Street, New York, New York, and that in any suit instituted against any one of them upon this contract. Underwriters will abide by the final decision of such court or of any appellate court in the event of an appeal.

The aforementioned are authorized and directed to accept service of process on behalf of the underwriters in any such suit and/or upon the request of the assured and/or insured person to give a written undertaking to the assured and/or insured person that they will enter a general appearance upon the underwriters' behalf in the event such a suit shall be instituted.

Further, pursuant to any statute of any state, territory or district of the United States which make provision therefor, the underwriters designate the superintendent, commissioner or director of insurance or other officer specified for that purpose in the statute, or his successor or successors in office, as their true and lawful attorney upon whom may be served any lawful process in any action, suit or proceeding instituted by or on behalf of the assured and/or insured person or any beneficiary arising out of this contract of insurance, and designate the aforementioned as the person to whom the said officer is authorized to mail such process or a true copy thereof.

This insurance may be cancelled on the short rate basis set out below at any time at the written request of the assured. This insurance may also be cancelled, with or without the return or tender of the unearned premium by or on behalf of the underwriters by delivering to the assured or by sending to the assured by mail, registered or unregistered at the address of the assured as shown in the certificate, not less than ten days' written notice stating when the cancellation shall be effective, and in such case the underwriters shall refund the paid premium less the earned portion thereof on demand. Individual certificates for insured persons may be cancelled in the same manner.

If the period of limitation relating to the giving of notice is prohibited or made void by any law controlling the contract hereof, such period shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

If the assured and/or insured person shall make any claim knowing the same to be false or fraudulent, as regards amount or otherwise, such insurance shall become void and claim shall be forfeited.

The Malpractice Liability Insurance of the International College of Surgeons is administered by John L. Krause and Associates, 29 South LaSalle Street, Chicago 3, Illinois. Persons interested in this insurance are advised to write to this address.

GROUP PROTECTION AGAINST SUIT FOR MALPRACTICE

Major Insurance Coverage for Members of the United States Section

International College of Surgeons

The ICS Group Malpractice Insurance Plan is well under way. Substantial savings are effected and as the participation increases, so does the success of the Plan.

In the past two months, several large Malpractice awards have been granted by the Courts, the top amount being $290,000.00. Therefore, it is imperative that sufficient protection be maintained.

If you do not already have the ICS Malpractice Insurance Application on file for use when your present Malpractice Insurance expires, please address your inquiry to John L. Krause & Associates, 29 So. La Salle St., Chicago 3, Illinois.

Rate Schedule (Annual Premiums)

Limits of liability	$ 25,000 75,000	$ 50,000 150,000	$100,000 300,000
Alabama, Connecticut, Delaware, New Hampshire, Louisiana, Pennsylvania, Rhode Island, South Carolina, Texas	60.00	69.00	73.50
Massachusetts, Michigan, Nebraska, North Dakota, West Virgina, Hawaii	85.00	97.50	104.00
District of Columbia, Minnesota, Montana, Nevada, New York, Oregon, Washington, Wisconsin	125.00	144.00	153.00
California*	192.75	221.78	276.84
All others	97.50	112.00	119.50

*Certain fees and taxes must be paid by the insured in the State of California. The rates, therefore, have been adjusted as above.

UNITED STATES SECTION

International College of Surgeons

THE PRESIDENT'S MESSAGE

Dr. Curtice Rosser

"The suicidal cult of manliness. . . ." A friend of mine, who at one time practiced medicine in Dallas and who is now the distinguished Medical Director of the Hercules Powder Company in Wilmington, Delaware, has coined a phrase that catches the imagination. According to Dr. Lemuel McGee, too many American males are killing themselves by subscribing to this cult. Men actually are the weaker sex and live an average of four years less than women, principally because of the stress to which they are subjected. In his article in *Today's Health,* my friend states that "the practice of manliness has become a lethal curse. The American male has been indoctrinated with the philosophy that he must live, work and play at a dizzy pace, that he can and should wade through all emotional and physical situations without flinching and without reflection. He must show others that he can take it. Under this cult he is to disregard any limitations of his mind or body. To behave otherwise is unmanly." A business man is to fill his day with appointments, omit his lunch, work or fill social engagements into the night and be ready for a tight schedule the next day. Men who are deluded by this "cult of manliness" will drive themselves to the point of exhaustion in work, play and social activity or a combination of these, destroying themselves unnecessarily and prematurely.

It seems to me that this injunction applies to the surgeon and the man of business with equal emphasis. It is quite easy for a popular surgeon to forget that he must live within his resources of strength, physically and mentally. I have just glanced at the necrology list in the current Journal of the American Medical Association. Forty-five deaths are reported. Of these, fifteen—or one third—died at an age under the three score and ten years presumably permitted to human beings and, significantly, the great majority of this younger group died as a result of coronary disease or cerebral hemorrhage. With many of my surgical confreres, it *seems a matter of pride to boast that they* can work from one year to the next without a vacation, that they have a longer operative schedule than any of their competitors and that they can do anything physically of which they were capable at early maturity.

Is there a moral to this? For example, do those who live in Mexico, in Spain, in Cuba or in France show themselves less manly by insisting upon a daily rest period —a siesta? Is a single, long, annual vacation the answer? I do not believe that it is because the period between is even more strenuous, first in preparation for an extended absence, then followed by a feverish effort to build back an impaired clientele after return.

This brings me to what relates this conception to our International College of Surgeons. What better type of vacation for the busy surgeon than carefully spaced, frequent semi-vacations to interesting medical meetings, particularly if they are located in areas where recreation may be combined with the pleasant task of keeping mentally fit and surgically informed. For example, during the second week in April, the surgeon has a choice of attending the Great Lakes Regional Meeting in French Lick, Indiana, or the meeting of the combined Northern and Southern California Sections in Las Vegas, Nevada. On the thirtieth of May, there begins a meeting of the New York and Canadian Sections at White Face Inn at Lake Placid, New York, and in early July, at the Balsams at Dixville Notch, New Hampshire, there will be held the traditional mid-summer meeting of the Eastern Region under the leadership of the Regent from Massachusetts, Dr. Leopold Brodny of Boston.

Here are four pleasant breaks for the busy surgeon — guaranteed to relax the keyed up nervous system and unharden the arteries. It would give me extreme pleasure to meet you, my brother surgeon, at each of these delightful assemblies.

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IMPORTANT NOTICE TO ALL CONGRESS PARTICIPANTS

Those desiring their Congress presentations to appear later as articles in the Journal of the International College of Surgeons, please note:

1. **A full copy of the manuscript, together with all illustrations, legends, tabular matter and bibliographic references, should be sent DIRECT to the** Editorial Office, Journal of the International College of Surgeons, 1516 Lake Shore Drive, Chicago 10, Illinois. Manuscripts so submitted will be promptly acknowledged and, on acceptance by the Editorial Board, published as soon after the Congress as possible. The Journal **cannot be held responsible for loss, failure of acknowledgment, delay in publication or nonpublication of any manuscript, or any subsidiary material appertaining thereto, which has not been submitted through the official editorial channels.**

2. Manuscripts may be submitted in advance of the Congress if desired. When this is done, they should be **plainly marked with the name, place and date of the Congress concerned,** to guard against premature publication.

3. Manuscripts delivered in person to Congress officials or others **for press reportorial use only** should be sent by the recipient to the Public Relations Bureau.

These requests are made not only to safeguard the Journal from error but in the best interests of our contributors. To make sure of prompt acknowledgment and efficient handling of your Congress presentation, please send it DIRECT to its ultimate destination!

NEW YORK STATE SURGICAL DIVISION

To Meet at Lake Placid, New York

Dr. Horace E. Ayers, F.A.C.S., F.I.C.S., Regent for the State of New York of the United States Section of the International College of Surgeons, is hard at work on the meeting that is going to take place at Whiteface Inn, Lake Placid, New York. In a recent communication to Fellows of the College in New York, Dr. Ayers wrote:

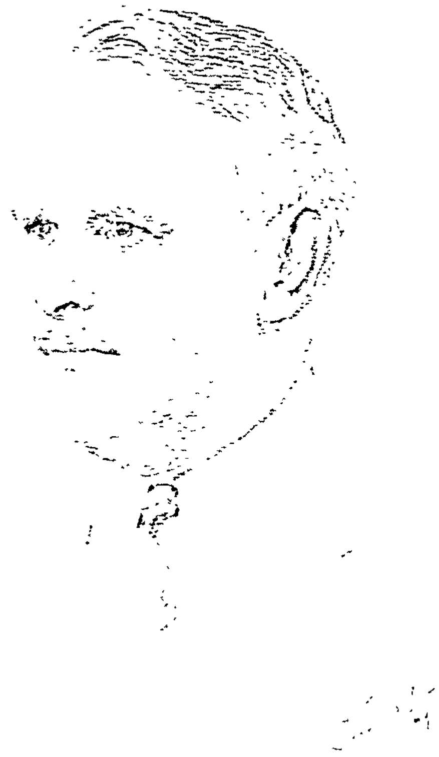
"After years of endeavor the New York State Chapter of the International College of Surgeons is proud of many things, among them that we now have a membership well over a thousand in our State. And since the Canadian Provinces of Ontario and Quebec participate in our annual meetings, it is important to have ample facilities. Hence, we would like to give you a preview of the plans for our next meeting, and we welcome any suggestions you may have.

"Dr. James Fleming of Rochester, New York, General Chairman, has secured an adequate and ideal convention site—Whiteface Inn, one of the world's most beautiful settings directly on the shores of Lake Placid. Whiteface Inn is one of the finest Adirondack resort hotels, with every requisite for rest, pleasure and comfort. Its facilities during this period are for the exclusive use of our members and their families. You may come earlier and stay later if you desire.

"We are arranging an outstanding scientific program in general surgery and the surgical specialties, under the chairmanship of Dr. Max Simon of Poughkeepsie, New York, President of our Surgical Section.

"A beautiful brochure with a reservation slip has been sent out, but mark your calendar with the dates May 30, 31 and June 1, 1957.

"Your Regent and Officers are deeply grateful for your loyal support of the New York State Chapter."



Dr. Horace E. Ayers, F.A.C.S., F.I.C.S., D.A.B.

The preliminary program of the Lake Placid Regional Meeting is as follows:

THURSDAY, MAY 30, 1957

3-6 P.M.—REGISTRATION, WHITEFACE INN LOBBY

6:00 P.M.—COCKTAILS AND DINNER (informal)

8:30 P.M.—WELCOME

James P. Fleming, M.D., F.I.C.S., General Chairman, Rochester, N. Y.

Vice-Admiral Ross T. McIntire, M.D., F.A.C.S., F.I.C.S., Executive Director, International College of Surgeons

Horace E. Ayers, M.D., F.A.C.S., F.I.C.S.. Vice President, United States Section, International College of Surgeons; Regent, New York State

M. M. Simon, M.D., F.A.C.S., F.I.C.S., President, New York State Section

10:00 P.M.—ADJOURN

Dr. James P. Fleming, F.I.C.S., General Chairman.

FRIDAY, MAY 31, 1957

8:00 A.M.—REGISTRATION, WHITEFACE INN LOBBY

Morning Session

Presiding: Victor A. Bacile, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.
Secretaries: George T. C. Way, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.
Louis D. Goldberg, F.I.C.S., Poughkeepsie, N. Y.

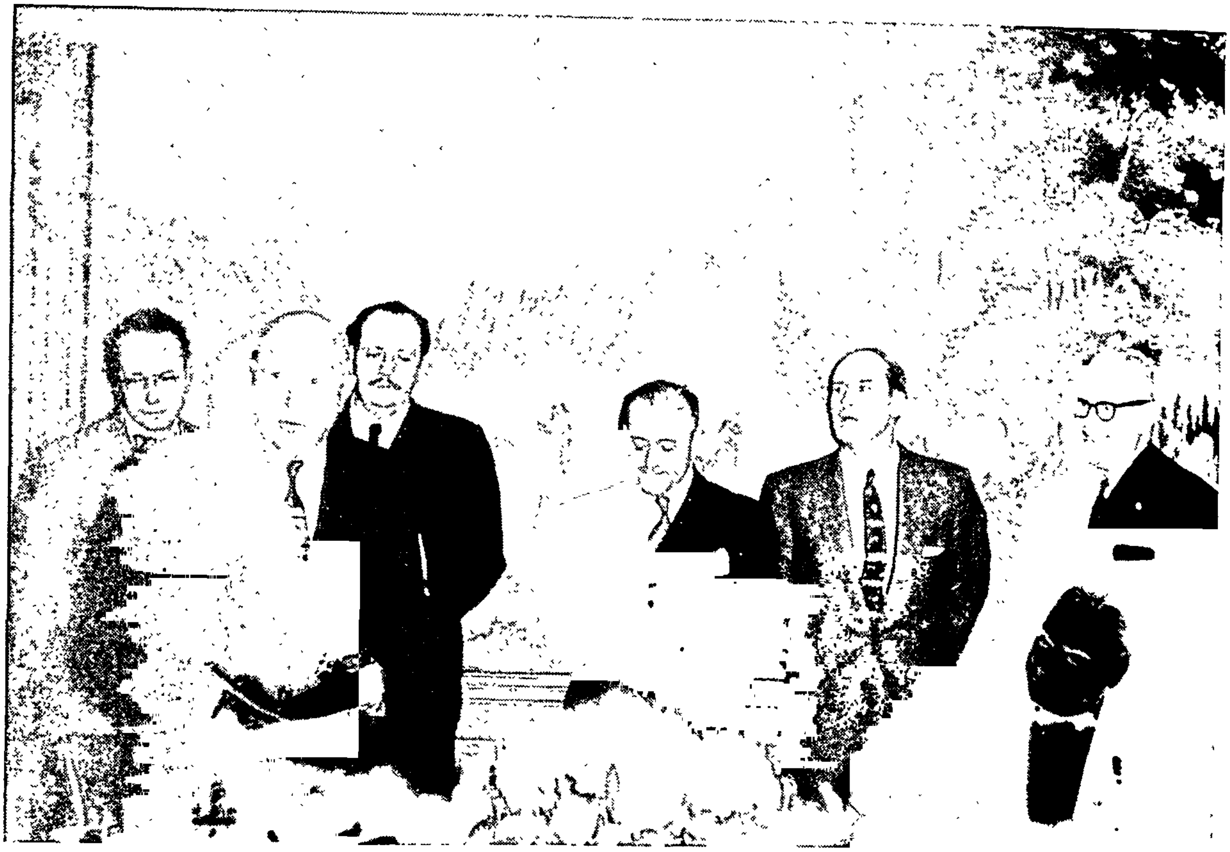
8:30-9:30 A.M.—RADICAL RESECTION FOR CARCINOMA OF THE STOMACH (3-D surgical motion picture in color with sound)
Samuel F. Marshall, M.D., F.A.C.S., Lahey Clinic, Boston, Mass.

9:30-10:15 A.M.—Panel—SURGICAL PROBLEMS IN GASTRODUODENAL ULCER
Moderator: Joseph Alvich, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Raymond W. McNealy, M.D., F.A.C.S., F.I.C.S., Chicago, Illinois
Louis Perkel, M.D., F.A.C.P., Jersey City, N. J.
C. B. Ripstein, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Louis P. River, M.D., F.A.C.S., F.I.C.S., Oak Park, Illinois
L. M. Russelot, M.D., F.A.C S., New York, N. Y.
Alfred Strauss, M.D., F.A.C.S., F.I.C.S., Chicago, Illinois

10:15-11:00 A.M. — Panel — DIAGNOSIS AND TREATMENT OF MASSIVE HEMORRHAGE FROM THE UPPER GASTROINTESTINAL TRACT
Moderator: Earl Halligan, M.D., F.A.C.S., F.I.C.S., Jersey City, N. J.
Moses G. Behrend, M.D., F.A.C.S., F.I.C.S., Philadelphia, Pa.
Ralph R. Coffey, M.D., F.A.C.S., F.I.C.S., Kansas City, Mo.
John H. Garlock, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Louis Perkel, M.D., F.A.C.P., Jersey City, N. J.
Alfred Strauss, M.D., F.A.C.S., F.I.C.S., Chicago, Illinois

11:00-11:50 A.M.—Panel—ACUTE SURGICAL DISEASE OF THE ABDOMEN
Moderator: Arnold S. Jackson, M.D., F.A.C.S., F.I.C.S., Madison, Wisconsin
Ralph R. Coffey, M.D., F.A.C.S., F.I.C.S., Kansas City, Mo.
Henry P. Leis, Jr., M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Merrill D. Lipsey, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Raymond W. McNealy, M.D., F.A.C.S., F.I.C.S., Chicago, Illinois

Dr. Max Michael Simon, F.A.C.S., F.I.C.S., Regent for New York State Chapter and Co-Chairman of Program Committee.



Dr. Ross T. McIntire, F.I.C.S., Executive Director of the International College of Surgeons, installing officers of the New York State Regional Division of the United States Section for 1957. The installation took place at the 7th Regiment Armory, New York City. Standing, left to right, Dr. J. J. Sauer, F.A.C.S., F.I.C.S., Dr. Juan Negrin Jr., F.A.C.S.. F.I.C.S., Secretary; Dr. Max Michael Simon, F.A.C.S., F.I.C.S., President; Dr. Joseph J. Rooney, F.A.C.S., F.I.C.S., President-Elect, and Dr. Horace E. Ayers, F.A.C.S., F.I.C.S., Regent. Seated, General Brazil.

Seymour W. Meyer, M.D., F.A.C.S., F.I.C.S., Brooklyn, N. Y.

Louis P. River, M.D., F.A.C.S., F.I.C.S., Oak Park, Illinois

11:50-12:00 Noon—Paper—PSYCHIATRY IN SURGERY

Secord Palmer, M.D., D.P.H., Brooklyn, N. Y.

12:00 Noon—ADJOURN

12:00-1:30 P.M.—LUNCHEON

FRIDAY, MAY 31, 1957

Afternoon Session

Presiding: James J. Toomey, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.

Secretaries: Frank Ciancimino, M.D., F.I.C.S., Nyack, N. Y.

Gilbert Palen, M.D., F.I.C.S., Margaretville, N. Y.

1:30-2:15 P.M.—Panel—BILIARY SURGERY

Moderator: Moses G. Behrend, M.D., F.A.C.S., F.I.C.S., Philadelphia, Pa.

Milton G. Bohrod, M.D., F.C.A.P., D.P.A., Rochester, N. Y.

Frank E. Ciancimino, M.D., F.I.C.S., Nyack, N. Y.

Ralph R. Coffey, M.D., F.A.C.S., F.I.C.S., Kansas City, Mo.

John H. Garlock, M.D., F.A.C.S., F.I.C.S., New York, N. Y.

Louis Perkel, M.D., F.A.C.P., Jersey City, N. J.

2:15-3:00 P.M.—Panel—UROLOGIC COMPLICATIONS IN PELVIC SURGERY

Moderator: Samuel Simon, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.

Max L. Brodny, M.D., F.A.C.S., F.I.C.S., Boston, Mass.

Joseph Haas, M.D., F.I.C.S., New York, N. Y.

Jean Paul Legault, M.D., F.A.C.S., F.I.C.S., Montreal, Canada

George R. Nagamatsu, M.D., F.A.C.S., F.I.C.S., New York, N. Y.

Allan L. Parlow, M.D., Rochester, N. Y.

James J. Toomey, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.

Left to right: Dr. A. N. Goldsmith (seated), Dr. McIntire, and Dr. Simon, who is presenting Dr. McIntire with a Christmas gift.

3:00-3:45 P.M.—Panel—PROBLEMS IN OBSTETRICS AND GYNECOLOGY

Moderator: Martin L. Stone, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
William C. Gillick, M.D., F.A.C.S., F.I.C.S., Niagara Falls, N. Y.
Edward Kahn, M.D., F.I.C.S., Queens Village, N. Y.
R. M. H. Power, M.D., F.A.C.S., F.I.C.S., Montreal, Canada
John F. Rogers, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.
Joseph F. Rooney, M.D., F.A.C.S., F.I C.S., New York, N. Y.
George J. Strean, M.D., F.A.C.S., F.I.C.S., Montreal, Canada

3:45-4:30 P.M.—Panel—DIFFICULT FRACTURE PROBLEMS

Moderator: Henry Milch, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Otto C. Hudson, M.D., F.A.C.S., F.I.C.S., Hempstead, N. Y.
Herbert A. Laage, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Joseph E. Milgram, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Anthony J. Pisani, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Saul Ritchie, M.D., F.A.C.S., F.I.C.S., Kingston, N. Y.

4:30-4:40 P.M.—INTERMISSION

4:40-5:10 P.M.—Paper—SURGICAL TREATMENT OF UTERINE AND VAGINAL PROLAPSE (with colored film)
Charles Thom, M.D., F.A.C.S., F.I.C.S., Staten Island, N. Y.
Discussion: Victor A. Bacile, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.

SATURDAY, JUNE 1, 1957

Morning Session

Presiding: Joseph F. Rooney, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Secretaries: Benjamin Lipton, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.
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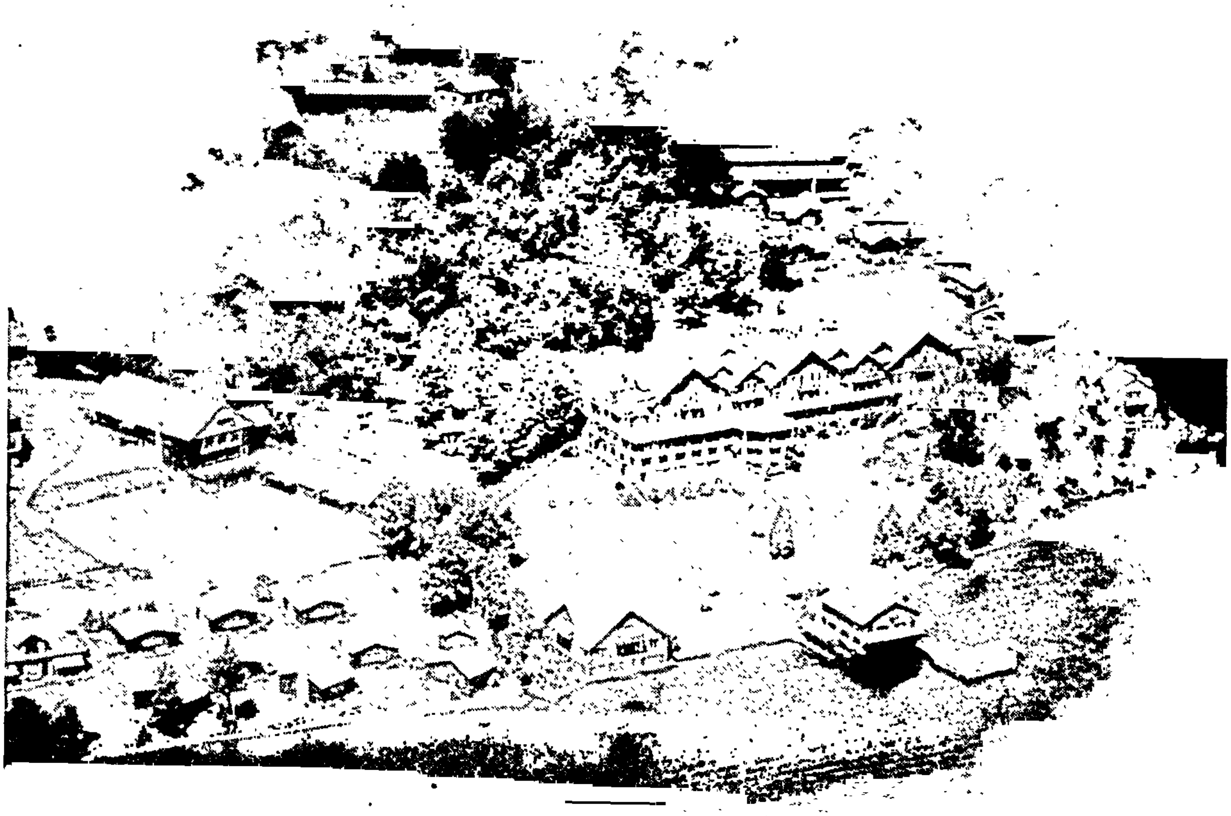
8:00-8:30 A.M.—SURGICAL EXPLORATION FOR OBSCURE MASSIVE UPPER GASTROINTESTINAL HEMORRHAGE (colored film)
J. E. Dunphy, M.D., F.A.C.S., Boston, Mass.,



View of the Whiteface Inn at Lake Placid, N. Y., where the New York State Section of the International College of Surgeons will hold its annual scientific meeting, May 30 and 31 and June 1, 1957.

Professor of Surgery, Harvard Medical School

This film demonstrates a careful, meticulous technique in searching for the source of GI bleeding.

8:30-8:40 A.M.—INTERMISSION

8:40-9:30 A.M.—Panel—RECENT ADVANCES IN THORACIC SURGERY

Moderator: Samuel A. Thompson, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Victor C. De Luccia, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Frank A. Gagan, M.D., F.C.C.P., F.I.C.S., Poughkeepsie, N. Y.
Edwin J. Grace, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Adrian Lambert, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
William L. Watson, M.D., F.A.C.S., F.I.C.S., New York, N. Y.

9:30-10:15 A.M.—Panel—PROBLEMS OF THYROID SURGERY

Modcrator: M. M. Simon, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.
Claude J. Hunt, M.D., F.A.C.S., F.I.C.S., Kansas City, Mo.
Arnold S. Jackson, M.D., F.A.C.S., F.I.C.S., Madison, Wis.
Henry P. Leis, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Lindon Seed, M.D., F.I.C.S., Chicago, Illinois

10:15-10:30 A.M.—INTERMISSION

10:30-11:15 A.M.—Panel—COMMON PROBLEMS IN ANESTHESIA

Moderator: Maxwell Weingarten, M.D., F.A.C.An., Rochester, N. Y.
Dean E. Babbage, M.D., F.A.C.An., Buffalo, N. Y.
Benjamin Etsten, M.D., F.A.C.An., Boston, Mass.
Pascal Friscia, M.D., F.A.C.An., Poughkeepsie, N. Y.
Merel Harmel, M.D., F.A.C.An., Brooklyn, N. Y.
Allen B. Noble, M.D., Montreal, Canada
David J. Power, F.R.C.P.(C), F.A.R.C.S. (Eng.), Montreal, Canada

SUNDAY, JUNE 2, 1957

Golf and Tennis Tournaments
Prizes

INDEX OF SPEAKERS

LVICH, JOSEPH, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Director of Surgery, St. Francis and Mother Cabrini Memorial Hospitals; Visiting, Fordham Hospital.

NGRIST, ALFRED, M.D., F.C.A.P., F.I.C.S., Jamaica, Long Island.
Professor of Pathology, Albert Einstein Medical School; Chief Medical Examiner, Borough of Queens.

YERS, HORACE E., M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Vice President, United States Section of the International College of Surgeons and Regent of the State of New York; Professor, New York Medical College, Attending, Flower-Fifth Avenue Hospital, Consultant, Metropolitan Hospital (New York City); Richmond Memorial Hospital (Staten Island); William McKinley Memorial Hospital (Trenton, N. J.); St. Francis Hospital (Poughkeepsie, N. Y.).

BABBAGE, DEAN E., M.D., Buffalo, N. Y.
Chairman, Department of Anesthesiology, Millard Fillmore Hospital; Clinical Professor and Chairman, Department of Anesthesiology, University of Buffalo; Chief Anesthesiologist, Meyer Memorial Hospital; Consultant in Anesthesiology, Veterans Administration Hospital.

BACILE, VICTOR, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.
Obst., Vassar Brothers Hospital; Sr. Gyn and Director of Obstetrics, St. Francis Hospital

BEHREND, MOSES G., M.D., F.A.C.S., F.I.C.S., Philadelphia, Pa.
Associate in Surgery, Jefferson Medical College; Attending Thoracic Surgeon, St. Agnes Hospital; Consultant, Albert Einstein Medical Center (Philadelphia, Pa.).

BERNSTEIN, DAVID, M.D., F.I.C.S., F.C.C.P., D-O.L., New York, N. Y.
Associate Clinical Professor of Otorhinolaryngology, New York University Post-Graduate Medical School, Associate Attending Otolaryngologist Bellevue and University Hospitals (New York City).

BINGHAM, D. L. C., M.D., F.R.C.S., (Ed & C), F.A.C.S., F.I.C.S., Kingston, Canada.
Kingston General Hospital, Kingston, Ontario; Professor of Surgery, Queen's University Medical College; Director of Surgery, Queen's General Hospital; Consultant, Hotel Dieu and St. Mary's of the Lake Hospitals.

BOHROD, MILTON G., M.D., F.C.A.P., D-P.A., Rochester, N. Y.
Pathologist and Director of the Laboratories of the Rochester General Hospital and the North Side Division of the Rochester General Hospital.

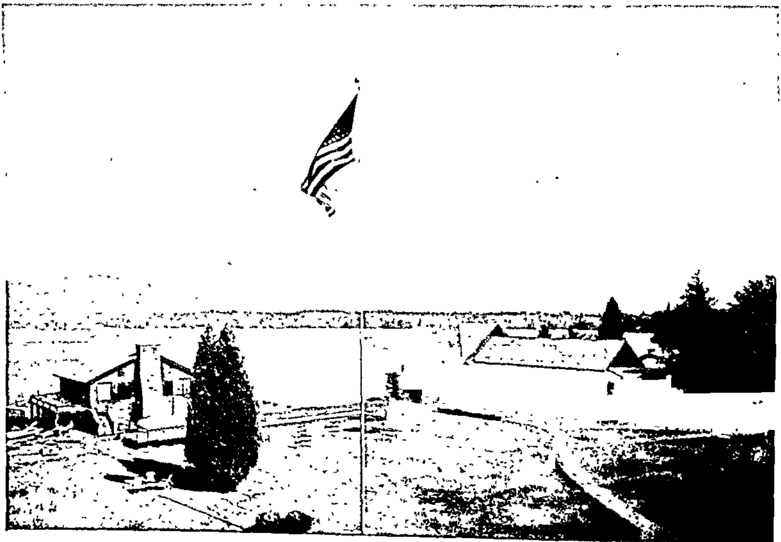
BRODNY, MAX L., M.D., F.A.C.S., F.I.C.S., Boston, Mass.
Diplomate, American Board of Urologic Surgery; Assistant Urologist, Boston Floating Hospital; Associate in Urology, Beth Israel Hospital; Junior Surgical Urologist, Mt. Auburn Hospital, Visiting Urologist, Boston State Hospital; Associate Staff Member, Joseph H. Pratt Diagnostic Hospital; Consulting Urologist, Milford Hospital; Assistant Clinical Professor of Urology, Tufts Medical School.

BURLO, GEORGE M., M.D., New York, N. Y.
Director, Department of Electroencephalography, Bellevue Hospital, (1st Neurosurgical N. Y. U. Division).

BURR, R. C., M.D., Kingston, Canada.
Chief of the Ontario Cancer Foundation, Kingston Clinic, Kingston University and Hospital.

BURT, CON AMORE V., M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Attending Surgeon, Vanderbilt Clinic and St. Clare's Hospital; Assistant Attending, Presbyterian Hospital; Consulting Proctologist, Hackensack Hospital (Hackensack, N. J.).

CLAYTON, SAM, M.D., D-O.L., D-I.C.S., F.I.C.S., New York, N. Y.
American Academy Ophthalmology and Otolaryngology, Associate Otolaryngologist, Hillside; Associate Oto-



Another scene at Lake Placid.

laryngologist, Queens General and Triboro.

CIANCIMINO, FRANK E., M.D., F.I.C.S., Nyack, N. Y.
Surgeon, Nyack and Letchworth Village, (Thiels); Assistant Surgeon, St. Clare's (New York City); Consulting Surgeon, Rockland State (Orangeburg).

COFFEY, RALPH R., M.D., F.A.C.S., F.I.C.S., Kansas City, Mo.
Diplomate, American Board of Surgery; Director of Surgery, Kansas City General Hospital; Chief Surgical Department, St. Joseph's Hospital.

DE LUCCIA, VICTOR C., M.D., F.A.C.S., F.C.C.P., F.I.C.S., New York, N. Y.
Diplomate of the American Board of Surgery; Diplomate of the Board of Thoracic Surgery; Associate Attending Thoracic Surgeon, Metropolitan Hospital (New York City); Assistant Attending Surgeon, St. Clare's and Flower-Fifth Avenue Hospitals (New York City).

ETSTEN, BENJAMIN, M.D., F.A.C.An., Boston, Mass.
Director, Department of Anesthesiology, New England Medical Center; Professor of Anesthesia at Tufts University School of Medicine.

FLEMING, JAMES P., M.D., D-I.C.S., F.I.C.S., D.P., Rochester. N. Y.
Chief of Surgery, Park Avenue Hospital; Attending Proctologist, St. Mary's Highland and Monroe County Hospitals; Consulting Proctologist, Arnold, Gregory and Lakeside Hospitals.

FRISCIA, PASCAL, M.D., F.A.C.An., Poughkeepsie, N. Y.
Director Anesthesia, St. Francis Hospital; Consulting Anesthesiologist, Veterans Administration Hospital, Castle Point.

GAGAN, FRANK, M.D., F.C.C.P., F.I.C.S., Poughkeepsie, N. Y.
Consulting Thoracic Surgeon, Hudson River State; Thoracic Surgeon, Bronchos and Surgeon, St. Francis; Consulting Surgeon, Vassar; Consulting Thoracic Surgeon, Matteawan; Consultant, Broncho-esophagology, St. Luke's (Newburgh); Consultant, Thoracic Surgeon and Bronchos, Northern Dutchess (Rhinebeck) and Highland Hospital (Beacon).

GARLOCK, JOHN H., M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Clinical Professor of Surgery, Columbia; Attending, Mt. Sinai Hospital; Consultant, St. Vincent's and Harlem Hospitals (New York City); John T. Mather Memorial Hospital (Port Jefferson); North Westchester Hospital (Mt. Kisco); Nathan and Miriam Barnert Memorial Hospital (Paterson); St. Mary's Hospital (Passaic, N. J.).

GRACE, EDWIN J., M.D.. F.A.C.S., F.I.C.S., Brooklyn, N. Y.
Director of Surgery, Grace Clinic (Brooklyn, N. Y.); Associate Attending St. John's Episcopal Hospital; Courtesy, Brooklyn Hospital; Consultant, Huntington Hospital (Huntington 1928).

GRAF, CARL, M.D., F.A.C.S., F.I.C.S., Buffalo, N. Y.
Attending Neurosurgeon, Meyer Memorial Hospital; Chief Neurosurgeon, Emergency Hospital (Buffalo).

GILLICK, WILLIAM C., M.D., F.A.C.S., F.I.C.S., Niagara Falls, N. Y.
Diplomate, American Board of Surgery; Chief, Obstetrics and Gynecology, Memorial Hospital.

GOLDMAN, HARRY, M.D., F.I.C.S., New York, N. Y.
American Proctology; New York Proctology; Consulting Proctologist, Joint Diseases.

HAAS, JOSEPH, M.D., F.I.C.S., New York, N. Y.
Director of Urology at Harlem Hospital (New York City).

HALLIGAN, EARL J., M.D., F.A.C.S., F.I.C.S., Jersey City, N. J.
Acting Medical Director, Director of Surgery and Surgeon-in-Chief, Jersey City Medical Center; Chief, St. Francis Hospital; Consultant, St. Mary's Hospital (Hoboken); Holy Name Hospital (Teaneck) and Rahway Hospital (Rahway); New Jersey Regent; Assistant Dean and Professor of Surgery, Seton Hall Medical College (Jersey City, N. J.).

HARMEL, MEREL, M.D., F.A.C.An., Brooklyn, N. Y.
Director, Department of Anesthesia, King's County Hospital; Professor and Chairman, Department of Anesthesia, State University of New York.

HUDSON, OTTO, M.D., F.A.C.S., F.I.C.S., Hempstead, N. Y.
Chairman Orthopedic Surgery and Attending Tumor Service, Meadowbrook Hospital; Chairman, Orthopedic Surgery, Nassau Hospital (Mineola); Attending, House of St. Giles the Cripple (Brooklyn and Garden City) and St. Charles' Hospital (Port Jefferson); Consultant, Nassau County Sanitarium (Farmingdale); Long Beach Hospital (Long Beach); North Country Community Hospital (Glen Cove).

HUNT, CLAUDE J., M.D., F.A.C.S., F.I.C.S., Kansas City, Mo.
Chairman, Research Hospital and Kansas City General Hospital No. 1; Hunt Surgical Group; Staff, St. Mary's, Menorah, St. Vincent's and Wheatley-Provident Hospitals; Research Clinic (Kansas City, Mo.); St. Margaret's Hospital (Kansas City, Kansas); President, American Goiter Assoc.

JACKSON, ARNOLD S., M.D., F.A.C.S., F.I.C.S., Madison, Wis.
Diplomate, American Board of Surgery; Director and Surgeon in Charge, Jackson Clinic; Chief of Staff, Methodist Hospital; President, U. S. Section, International College of Surgeons.

JENSEN, D. REES, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Assistant Clinical Professor of Surgery, Cornell University Medical College; Attending Surgeon, Knickerbocker and Willard Parker Hospitals; Attending, New York Hospital (1941).

KAHN, EDWARD, M.D., F.I.C.S., New York, N. Y.
Diplomate, American Board Obstetrics and Gynecology; Staff, Obs. and Gyn. (Long Island Jewish Hospital); Asst. Obs. and Gyn. (Syden).

LAAGE, HERBERT A., M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Associate, State University (New York City); Attending Orthopedic Surgeon, Misericordia Hospital; Attending and Chairman, Out Patient Department, St. Charles Hospital Orthopedic Clinic and Long Island College Hospital (Brooklyn); Consultant, Eastern Long Island Hospital (Greenport); Good Samaritan Hospital (Suffern) and Central Suffolk Hospital (Riverhead).

LAMBERT, ADRIAN, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Associate Attending Surgeon, Columbia; Assistant Attending Surgeon, Roosevelt Hospital; Attending Surgeon, 1st Division and Attending Thoracic Surgeon, Bellevue Hospital; Attending Surgeon, Nassau County Sanitarium (Farmingdale); Associate Attending Surgeon, Chest Surgery, Knickerbocker Hospital; Consultant, New York Orthopedic Dispensary and Hospital, New York Infirmary; St. Barnabas Hospital for Chronic Diseases (New York City) and Southampton Hospital (Southampton); Tarrytown Hospital Division, Phelps Memorial Hospital Association (Tarrytown); and Nassau Hospital (Mineola 1935).

LEGAULT, JEAN PAUL, M.D., F.A.C.S., F.I.C.S., Montreal, Canada.
Membre Titulaire Societe Internationale De Chirurgie, Professeur Agrege A La Faculte De Medecine Chief De Service D'Urologie A L'Hotel-Dieu.

LEIS, HENRY P., M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Associate in Surgery and Assistant Clinical Professor of Surgery, New York Medical College; Staff, Doctors and Medical Arts Center Hospitals; Assistant Attending Surgeon, Flower-Fifth Avenue Hospital; Visiting Staff, Willard Parker Hospital; Associate Visiting, Bird S. Coler Memorial Hospital; Assistant Visiting, Metropolitan Hospital.

MC INTIRE, ROSS T., M.D., F.A.C.S., F.I.C.S., Chicago, Ill.
Former Surgeon General, United States Navy, Executive Director, International College of Surgeons.

MC NEALY, RAYMOND W., M.D., F.A.C.S., F.I.C.S., Chicago, Ill.
Professor of Surgery, Cook County Graduate School of Medicine; Associate Professor of Surgery, Northwestern University Medical School; Chief Surgeon, Wesley Memorial Hospital.

MEYER, SEYMOUR, M.D., F.A.C.S., F.I.C.S., Brooklyn, N. Y.
Clinical Instructor of Surgery, State University (New York); Surgeon, Memorial Hospital (Jamaica); Attending and Chairman Hand Service, St. John's Episcopal Hospital (Brooklyn); Staff, Long Island Jewish Hospital (New Hyde Park); Assistant Orthopedic Surgeon, King's County Hospital Center (Brooklyn).

MILCH, HENRY, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Instructor in Anatomy, Columbia University Medical College; Attending and Chairman of Clinic, Hospital for Joint Diseases; Visiting Surgeon, Riverside Hospital; Consultant, Liberty General Hospital (Liberty, N. Y.).

MILGRAM, JOSEPH E., M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Director of Orthopedic Surgery, Hospital for Joint Diseases; Consultant, Adelphi and Jewish Hospitals and Jewish Hospital for Chronic Diseases (Brooklyn); Blythedale Hospital (Valhalla).

MUSSIO, JOHN G., M.D., F.I.C.S., D.I.B.S., Brooklyn, N. Y.
Associate Pro[illegible]
York Medical [illegible]
Gynecologist a[illegible]
Fifth Avenue [illegible]

NAGAMATSU, GEORGE R., M.D., F.A.C.S., F.I.C.S., New York, N. Y.
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NASH, C. STEWART, M.D., F.A.C.S., F.I.C.S., Rochester, N. Y.
Instructor, University of Rochester School of Medicine (Rochester, N. Y.).

NEGRIN, JUAN JR., M.D., F.I.C.S., New York, N. Y.
[illegible] Metropolitan Medi-[illegible] n and King's Park [illegible] Bellevue and Lenox [illegible]

NOBLE, ALLEN B., M.D., Montreal, Canada.
Assistant Professor of Anesthesiology, McGill University; Chief, Department of Anesthesia, Royal Victoria Hospital (Montreal, Canada).

PALMER, SECORD, M.D., D.P.H., Brooklyn, N. Y.
Assistant Director, Brooklyn State Hospital.

PARLOW, ALLAN L., M.D., Rochester, N. Y.
Diplomate of the American Board of Urology, Assistant Professor of Urology (Rochester Medical School).

PERKEL, LOUIS, M.D., F.A.C.P., Jersey City, N. J.
Professor of Gastroenterology, Seton Hall Medical College (Jersey City, N. J.); Attending Gastro-Enterologist, Jersey City Medical Center.

PISANI, ANTHONY J., M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Chief Orthopedic Surgeon, St. Vincent's Hospital (New York City); Associate Orthopedic Surgeon, Bellevue.

POWER, DAVID J., M.D., F.R.C.P. (C), F.A.R.C.S. (ENG.) Montreal, Canada.
Sessional Lecturer of Anatomy, McGill. Assistant, St. Mary's Memorial Hospital.

POWER, DAVID J., M.D., F.R.C.P. (C), F.A.R.C.S. (END.) Montreal, Canada.

RECIO, PARFIRIO M., M.D., F.P.C.S., F.A.C.S., F.I.C.S., Manila, Philippines.
Regent, Philippine College of Surgeons.

RAINEY, JOHN J., M.D., F.A.C.S., F.I.C.S., Troy, N. Y.
Consultant Otolar, St. Mary's McClellan Memorial.

RIPSTEIN, C. B., M.D., F.A.C.S., F.I.C.S., Brooklyn, N. Y.
Professor of Surgery, Einstein Medical College (New York City).

RITCHIE, SAUL, M.D., F.A.C.S., F.I.C.S., Kingston, N. Y.
Attending Orthopedic Surgeon, Benedictine, Kingston and Ulster Co. Tuberculosis Hospitals (Kingston); Consultant Northern Dutchess Health Center (Rhinebeck); Memorial of Greene County (Catskill); Margaretville Hospital (Margaretville); Maimonides Hospital (Liberty); Civilian Consultant, Station Hospital (West Point 1943).

RIVER, LOUIS P., M.D., F.A.C.S., F.I.C.S., Oak Park, Ill.
Diplomate, American Board of Surgery. Clinical Professor of Surgery, Stritch School of Medicine of Loyola University; Professor of Surgery, Cook County Post Graduate Medical School.

ROGERS, JOHN F., M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.
Diplomate, American Board of Obstetrics and Gynecology; Attending Gynecologist and Obstetrician, St. Francis and Vassar Brothers Hospitals (Poughkeepsie); Consulting Obstetrician and Gynecologist, Northern Dutchess Hospital (Rhinebeck).

ROONEY, JOSEPH F., M.D., F.A.C.S., F.I.C.S., D.I.C.S., New York, N. Y.
President-Elect, New York State Section of International College of Surgeons; Instructor, New York Medical College; Assistant Attending Gynecologist, Flower-Fifth Avenue Hospital.

ROSSER, CURTICE, M.D., F.A.C.S., F.I.C.S., Dallas, Texas.
Diplomate, American Board of Proctologic Surgery; Professor and Head, Department of Proctology, Southwestern Medical College; Chief, Proctologic Staff City-County Hospitals; Proctologist, Baylor University Hospital; President, United States Section of International College of Surgeons.

RUSSELOT, L. M., M.D., F.A.C.S., New York, N. Y.
Clinical Professor of Surgery, New York University Medical College; Director of Surgery, St. Vincent's Hospital (New York City).

SAUER, JOHN J., M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Assistant Ophth., Lenox Hill; Consulting Ophth., U. S. Public Health Service (New York City) and St. Francis (Port Jervis); Ophth., Willard Parker and French Hospitals.

SCHEER, HENRY M., M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Clinical Professor, New York Polyclinic Hospital; Consultant, Gouverneur Hospital.

SCHEER, ALAN A., M.D., F.A.C.S., F.I.C.S., D-OL., New York, N. Y.
Assistant Attending Surgeon, Manhattan E.E.N.T.; Assistant Surgeon, Otolar Bell, Assistant Clinical Professor of Otolaryngology, New York University Medical School

SCHUMACHER, GEORGE, M.D., F.I.C.S., New York, N. Y.
Professor, Neurology, Vermont University Medical School; Formerly Director of Neurological Service, Bellevue Hospital, 2nd Division, Cornell University Medical School.

SEED, LINDON, M.D., F.I.C.S., Chicago, Ill.
Diplomate, American Board of Surgery; Associate Professor of Surgery, University of Illinois Medical School, Surgical Staff, Oak Park Hospital.

SIMON, MAX MICHAEL, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.
Attending Surgeon, St. Francis Hospital; Consulting Surgeon, Highland and Matteawan Hospitals (Beacon); President, New York State Section of International College of Surgeons.

SIMON, SAMUEL, M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.
Diplomate of the American Board of Urology; Director, Urology, Vassar Brothers Hospital; Associate Attending Urologist, St. Francis Hospital; Attending Urologist, Hudson River State Hospital, Consulting Urologist, Northern Dutchess Health Center and Highland Hospital.

STONE, MARTIN L., M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Professor and Director, Department of Obstetrics and Gynecology, New York Medical College and Flower-Fifth Avenue Hospitals (New York City).

STRAUSS, ALFRED, M.D., F.A.C.S., F.I.C.S., Chicago, Ill.
Sr. Attending Surgeon, Michael Reese and Mt. Sinai Hospitals; Attending Surgeon, Franklin Blvd. Community and Louis A. Weiss Memorial Hospital (1922).

STREAN, GEORGE J., M.D., F.A.C.S., F.I.C.S., Montreal, Canada.
Assistant Professor, McGill; Department Director, Jewish Hospital.

TARLOV, ISIDORE, M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Director [illegible] dical College, Metropo[illegible] ospital (New York Ci[illegible] rwalk, Conn.

TAUSEND, [illegible] **New York, N. Y.**

THEIS, FRANKLYN B., M.D., F.A.C.S., F.I.C.S., D.O., Nyack, N. Y.
Director, E.E.N.T., Nyack, N. Y.

THOM, CHARLES, M.D., F.A.C.S., F.I.C.S., Staten Island, N. Y.
Diplomate, American Board of Obstetrics and Gynecology; Director of Obstetrics and Gynecology, St. Vincent's Hospital (Staten Island).

THOMPSON, SAMUEL A., M.D., F.A.C.S., F.I.C.S., D.A.B., New York, N. Y.
Associate Professor, New York Medical College (New York City); Director, Thoracic Surgery Service, Metropolitan Hospital (New York City); Municipal Sanitarium (Otisville); Attending Surgeon, St. Clare's, St. Anthony's Riker's Island Hospitals; Consultant, St. Joseph's Hospital for Diseases of the Chest (New York City); Paterson General Hospital (Paterson, N. J. 1929).

THOREK, MAX, M.D., F.Sc.D., L.L.D., F.B.C.S., F.I.C.S., F.Pc.S. (Hon.) F.R.S.M., Chicago, Ill.
Founder and General Secretary, International College of Surgeons; Professor of Surgery, Cook County Graduate School of Medicine; Surgeon-in-Chief, American Hospital (Chicago). SPEAKER AT THE BANQUET.

TOOMEY, JAMES J., M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.
Diplomate of the American Board of Urology; Director, Surgery and Urology, St. Francis Hospital, Consultant, Harlem Valley State Hospital (Wingdale); Hudson River State and Vassar Brothers Hospitals (Poughkeepsie).

TRAVIS, WILLIS, M.D., F.I.C.S., Poughkeepsie, N. Y.
Associate Attending Ophthalmologist, St. Francis and Vassar Brothers Hospitals.

WAULINGFORD, ARTHUR J., M.D., F.A.C.S., F.I.C.S., Albany, N. Y.
Professor of Gynecology and Director of Obstetrics and Gynecology, Albany Medical College and Hospital; Gynecologist, Brady Hospital, Chief Gynecologist, A

bany and St. Peter's Hospitals. *ACUTE ABDOMINAL DISEASES IN PREGNANCY.*

WATSON, WILLIAM L., M.D., F.A.C.S., F.I.C.S., New York, N. Y.
Instructor, Cornell University Medical College; Associate Professor of Surgery and Director of Cancer Coordination, New York University Medical College; Department Director, Manhattan E.E.T. Hospital; Attending Thoracic Surgeon, Memorial Hospital for the Treatment of Cancer and Allied Diseases; Visiting, 3rd Surgical Division, New York Infirmary; Consultant, Thoracic Surgery, New York Infirmary; Consultant Radium Therapist, Misericordia Hospital (1932).

WAY, GEORGE T. C., M.D., F.A.C.S., F.I.C.S., Poughkeepsie, N. Y.
Attending Gynecologist, St. Francis and Vassar Brothers Hospitals (Poughkeepsie); Director of Obstetrics and Gynecology, Northern Dutchess (Rhinebeck).

WEINGARTEN, MAXWELL, M.D., F.A.C. An., Rochester, N. Y.
Chief, Department of Anesthesiology, St. Mary's Hospital.

WOLF, C. F., M.D., A.I.C.S., Beacon, N. Y.
Surgeon in Chief, Highland Hospital (Beacon); Consulting Surgeon, Mattewan State Hospital.

ACTIVITIES FOR THE LADIES

The ladies who are attending the New York State Sectional Meeting of the International College of Surgeons on May 30, 31 and June 1, at Whiteface Inn, Lake Placid, N. Y., are invited to participate in the social activities which have been planned for their entertainment.

The General Chairmen for the Woman's Auxiliary is Mrs. J. P. Fleming, Rochester, N. Y.; her Co-Chairmen are Mrs. C. Dance, Brooklyn, N. Y.; Mrs. J. G. Mussio, Brooklyn, N. Y., and Mrs. M. M. Simon, Poughkeepsie, N. Y. Members of the Committee are Mrs. V. A. Bacile, Mrs. C. Crispell, Mrs. V. Daly, Mrs. F. A. Gagan, Mrs. L. Goldberg, Mrs. B. Lipton, Mrs. J. F. Rogers, Mrs. S. Simon and Mrs. G. T. C. Way, of Poughkeepsie; Mrs. M. Crino, Mrs. C. Gallaher and Mrs. L. Rumbold, of Rochester; Mrs. H. Courtney, of Syracuse; Mrs. W. Gillick, of Niagara Falls; Mrs. F. Noonan, of Cohoes; Mrs. J. J. Noonan, of Troy; Mrs. T. O'Brien, of Buffalo; Mrs. R. Reagan, of Tonawanda, and Mrs. L. C. Weston, of Massena.

WELCOME

A cordial invitation is extended to members of the surgical and allied professions and their families and friends to attend the New York State Sectional Meeting of the International College of Surgeons at the Whiteface Inn, Lake Placid, N. Y., May 30th, 31st, and June 1st, 1957. Advance registration Thursday, May 30th, 3 to 6 P.M., Whiteface Inn Lobby.

Registration fee, $5. No charge for residents and interns. No charge for the ladies. Surgeons who are not Fellows may attend all sessions, same registration fee, $5.

Women's registration in the lobby. Registration, gratis.

For reservations, please write to Whiteface Inn., Lake Placid, N. Y., promptly.

LA PRESSE MEDICALE

La Grand Journal Français de Chirurgie et de Medicine parait chaque semaine, et donne toutes les informations scientifiques et professionelles

ABONNEMENT

$17.00 par an.

Priére d'envoyer directement le montant de l'abonnement à:

LA PRESSE MEDICALE, Masson et Cie, éditeurs

120 Boulevard St. Germain Paris VI, France

GREAT LAKES REGIONAL DIVISION AND INDIANA STATE CHAPTER TO MEET AT FRENCH LICK IN APRIL

Under the General Chairmanship of Dr. J. Andrew Bowen, F.A.C.S., F.I.C.S., D.A.B., Regent of Kentucky, the Great Lakes Regional Division of the United States Section, International College of Surgeons, will combine with the Indiana State Chapter in a meeting at French Lick, Indiana, April 7-10, 1957, at the French Lick Sheraton Hotel. Current medical and surgical problems and progress will be discussed by men of national and international reputation. In addition to the scientific sessions, social and sports activities will be offered.

SCHEDULE OF ACTIVITIES

Monday, April 8

Scientific Program 9:00 a.m.-1:00 p.m.
Ladies:
Tour of West Baden College
Tour of hotel gardens and hothouse
Luncheon, Regents 1:15 p.m.

Tuesday, April 9

Scientific Program 9:00 a.m.-1:00 p.m.
Ladies:
Luncheon and Style Show 12:30 p.m.
Luncheon:
Members of Indiana State Chapter 1:15 p.m.
Social Hour 6:30 p.m.
Courtesy of Eli Lilly & Company, Indianapolis, Indiana
Banquet 7:30 p.m.
(Toastmaster, Dr. Ross T. McIntire; guest speaker to be announced)

Wednesday, April 10

Scientific Program 9:00 a.m.-1:00 p.m.
Ladies:
Bridge tournament
Shuffleboard tournament

SCIENTIFIC PROGRAM

Monday, April 8, 1957

Invocation ....8:45-9:00 .a.m.

Greetings:

J. Andrew Bowen, M.D., General Chairman

Ross T. McIntire, M.D., F.A.C.S., F.I.C.S., D.A.B., Executive Director, International College of Surgeons

Max Thorek, M.D., Sc.D., LL.D., F.B.C.S. (Hon.), F.I.C.S. (Hon.), F.P.C.S. (Hon.), F.R.S.M. (Eng.), International Secretary General, International College of Surgeons

Presiding:

Leon Gray, M.D., F.I.C.S., President, Indiana State Chapter, Martinsville, Indiana

Secretary:

Ben A. Reid, M.D., F.I.C.S.
Louisville, Kentucky

Vesicorectostomy—Six Cases. .9:00-9:20 a.m.

John J. Robbins, M.D., Board of Eligible Urology, Instructor of Surgery, Department of Urology, University of Louisville School of Medicine, Louisville, Kentucky

Local Skin Flaps for Lesions of Nose and Upper Lip.......9:20-9:40 a.m.

J. Thomas Giannini, M.D., F.A.C.S., D.A.B., Assistant Professor of Surgery, Department of Plastic Surgery, University of Louisville School of Medicine, Louisville, Kentucky

Colles Fracture ....9:40-10:00 a.m.

Harvey W. Sigmond, M.D., F.A.C.S., F.I.C.S., D.A.B., Assistant Professor, Orthopedic Surgery, Indiana University Medical School, Indianapolis, Indiana

Tube Feeding with Natural Foods ....10:00-10:20 a.m.

James Barron, M.D.. F.A.C.S., D.A.B., Associate Surgeon, Division of General Surgery, Henry Ford Hospital, Detroit, Michigan

Head Pain Due to Tortuous Basilar Artery ....10:20-10:40 a.m.

Gordon L. Smiley, M.D., D.A.B., Louisville, Kentucky

Intermission ....10:40-11:00 a.m.

Recent Developments in Cardiac Surgery ....11:00-11:20 a.m.

J. Ray Bryant, M.D., F.A.C.S., D.A.B., Louisville, Kentucky

Blood Volume and Chronic Shock ....11:20-11:40 a.m.

John E. Krueger, M.D., M.A., Attending Anesthesiologist, St. Joseph's Hospital, Healthwin Hospital, Northern Indiana Children's Hospital, South Bend, Indiana

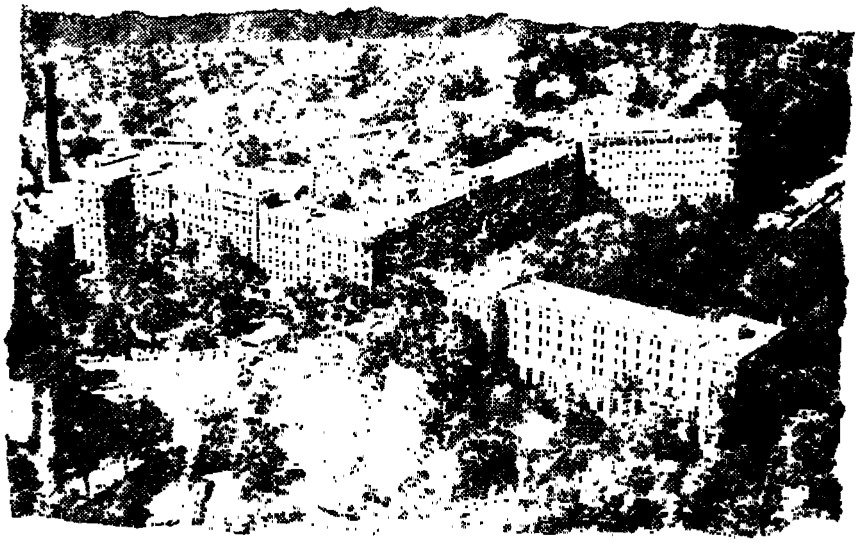
Evaluation of Early Operation for Myelomeningocele ....11:40-12:00 M.

Robert F. Heimburger, M.D., D.A.B., Associate Professor of Surgery, Division of Neurosurgery, Indiana University Medical School, Indianapolis, Indiana

Panel

Diagnostic Problems in Urology ....12:00-1:00 p.m.

Moderator: J. Andrew Bowen, M.D., F.A.C.S., F.I.C.S., D.A.B., Professor of Urology, Uni-



View of French Lick Sheraton Hotel, French Lick, Indiana, where the joint meeting of the Great Lakes Regional Division and the Indiana State Chapter will hold meeting April 7-10, 1957.

versity of Louisville School of Medicine, Louisville, Kentucky

George H. Ewell, M.D., F.A.C.S., F.I.C.S., D.A.B., Urologist, Jackson Clinic and Methodist Hospital, Madison, Wisconsin

Harry E. Kasten, M.D., F.A.C.S., F.I.C.S., D.A.B., Urologist, Beloit Municipal Hospital, Beloit, Wisconsin

Howard W. Christensen, M.D., F.A.C.S., F.I.C.S., D.A.B., Urologist, Memorial St. Mary's and Marathon County Hospitals, Wausau, Wisconsin; Consultant, Iron Mountain Michigan Veterans Administration Hospital

Hastel L. Townsend, M.D., D.A.B., Associate Professor of Radiology, University of Louisville School of Medicine, Louisville, Kentucky

Tuesday, April 9, 1957

Presiding:

Paul Haley, M.D., F.I.C.S., Regent of Indiana, South Bend, Indiana

Secretary:

Elbert L. Dennis, M.D., F.I.C.S., Louisville, Kentucky

Surgical Treatment of Aneurysm of the Abdominal Aorta....9:00-9:20 a.m.

J. Herman Mahaffey, M.D., Instructor of Surgery, University of Louisville School of Medicine, Louisville, Kentucky

Radiation Therapy of Skin Cancer ....9:20-9:40 a.m.

Wallace D. Buchanan, M.D., F.A.C.R., D.A.B., Clinical Instructor in Radiology, Northwestern University, Chicago, Illinois; Radiologist, St. Joseph's Hospital, South Bend, Indiana

The Emergency Aspects of Head Injury ....9:40-10:00 a.m.

H. Lester Reed, M.D., F.A.C.S., F.I.C.S., D.A.B., Clinical Assistant in Neurosurgery, University of Louisville School of Medicine, Louisville, Kentucky

Ectopic Pregnancy ....10:00-10:20 a.m.

Walter P. Moenning, M.D., F.I.C.S., Gynecology Department, Indiana University, Indianapolis General Hospital, Indianapolis, Indiana

Pitfalls in the Roentgen Diagnosis of Gallbladder Diseases ....10:20-10:40 a.m.

John R. Smith, M.D., D.A.B., Instructor of Radiology, University of Louisville School of Medicine, Louisville, Kentucky

Intermission ....10:40-11:00 a.m.

Some Problems of Urinary Tract Infection in Children, with Reference to Ureterovesical Reflux..11:00-11:20 a.m.

L. Douglas Atherton, M.D., D.A.B., Instructor in Urology, University of Louisville School of Medicine, Louisville, Kentucky

Pathology of Genitourinary Diseases in Children.....11:20-11:40 a.m.

John D. Allen, M.D., D.A.B., Associate Professor of Pathology, University of Louisville School of Medicine, Louisville, Kentucky

Study of Carcinoma of the Fundus of the Uterus in Its Relation to Polyps...11:40-12:00 noon

William O. Johnson, M.D., F.A.C.S., D.A.B., Professor of Gynecology and Head of the Combined Departments of Gynecology and Obstetrics, University of Louisville School of Medicine, Louisville, Kentucky

Mobilization of the Stapes..12:00-12:20 p.m.

Alan Austin Scheer, M.D., F.A.C.S., F.I.C.S., D.A.B., Assistant Clinical Professor in Otolaryngology, New York University College of Medicine, New York City, New York

Surgical Management of Draining Nipple ....12:20-12:40 p.m.
George N. Bates, M.D., F.A.C.S., F.I.C.S., D.A.B., Active Surgical Staff, St. Vincent, St. Charles and Maumee Valley Hospitals; Courtesy Surgical Staff, Mercy and Toledo Hospitals, Toledo, Ohio

Incubation Period in Bronchogenic Carcinoma ....12:40-1:00 p.m.
Edward C. Lawless, M.D., Columbus, Ohio

Wednesday, April 10, 1957

Presiding:
J. Duane Miller, M.D., F.A.C.S., F.I.C.S., D.A B., Regent of Michigan, Grand Rapids, Michigan.

Secretary:
Gilman D. Kirk, M.D., F.A.C.S., F.I.C.S., D.A.B., Regent of Ohio, Columbus, Ohio

Tumors of the Neck..........9:00-9:20 a.m.
Arnold S. Jackson, M.D., F.A.C.S., F.I.C.S., D.A.B., Director, Jackson Clinic, Madison, Wisconsin

Management of Subcapital Fractures of the Hip by Transfixion...... ..9:20-9:40 a.m.
Frederick James Krueger, M.D., F.A.C.S., F.I.C.S., D.A.B., Assistant Clinical Professor, Orthopedic Surgery, Marquette University, Milwaukee, Wisconsin

Benign Neoplasms of the Stomach ....9:40-10:00 a.m.
Edmund W. Schacht, M.D., F.A.C.S., F.I.C.S., Chairman, Surgical Service, St. Luke's Hospital, Racine, Wisconsin

Fractures of the Ankle....10:00-10:20 a.m.
George J. Garceau, M.D., F.I.C.S., D.A.B., Professor and Chairman, Department of Orthopedic Surgery, Indiana University Medical School, Indianapolis, Indiana

A Method of Surgical Treatment of Urethral Stricture Not Amenable to Dilatation ....10:20-10:40 a.m.
Avrom M. Isaacs, M.D., F.A.C.S., D.A.B., Clinical Instructor of Surgery, Department of Urology, University of Louisville School of Medicine, Louisville, Kentucky

Intermission ....10:40-11:00 a.m.

Panel

Thyroid Diseases ....11:00-12:00 M.
Moderator: Arnold S. Jackson, M.D., F.A.C.S., F.I.C.S., D.A.B., Director, Jackson Clinic, Madison, Wisconsin
William O. Johnson, M.D., F.A.C.S., D.A.B., Professor of Gynecology and Head of the Combined Departments of Gynecology and Obstetrics, University of Louisville School of Medicine, Louisville, Kentucky
Claude J. Hunt, M.D., F.A.C.S., F.I.C.S., D.A.B., Former Chairman, Research and Kansas City Municipal Hospitals; Surgeon, Research Hospital, St. Mary's Hospital, Menorah Hospital, Surgical Section Research Clinic; Chairman of Trustees, United States Section, International College of Surgeons, Kansas City, Missouri
Lindon Seed, M.D., F.I.C.S., D.A.B., Clinical Associate Professor of Surgery, University of Illinois College of Medicine; Surgical Staff and Director of Isotope Laboratories, Augustana Hospital, Chicago, Illinois

The Complications of Cataract Surgery and Their Management..12:00-12:20 p.m.
Richard C. Troutman, M.D., F.A.C.S., D.A.B., Professor of Ophthalmology, Department of Surgery, State University of New York, Brooklyn, New York

Menstruation: Its Physiology and Abnormalities ....12:20-12:40 p.m.
Gilbert F. Douglas, M.D., F.A.C.S., F.I.C.S., D.A.B., Associate Professor of Gynecology, Department of Gynecology, Medical College of Alabama, Birmingham, Alabama

Surgical Treatment of Inguinal Hernia, with Particular Reference to Recurrences ....12:40-1:00 p.m.
W. M. McMillan, M.D., F.A.C.S., F.I.C.S., D.A.B., Professor of Surgery, Cook County Graduate School; Assistant Professor of Surgery, Northwestern University, Chicago, Illinois

The General Chairmen of the Woman's Auxiliary for the French Lick meeting are Mrs. Arnold S. Jackson, Madison, Wisconsin; Mrs. Leon Gray, Martinsville, Indiana, and Mrs. Elbert L. Dennis and Mrs. Karl Winter, Louisville, Kentucky. The Co-Chairmen are Mrs. Ben A. Reid, Mrs. J. Andrew Bowen and Mrs. Joseph C. Ray, Louisville, Kentucky; Mrs. Paul Haley, South Bend, Indiana, and Mrs. George Garceau, Mrs. Phillip Holland, Mrs. Eugene Newland and Mrs. Simon Reisler, Indianapolis, Indiana.

A cordial invitation is extended to members of the surgical and allied professions, their families and guests to attend.

Advance registration Sunday, April 7 in the Lobby from 10:00 a.m. to 12:00 noon and from 2:00 p.m. to 4:00 p.m. Registration fee $5.00 for members and visiting physicians. No charge for residents, interns, nurses and the Military.

Women's registration in the Lobby. Fee $5.00.

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The purpose of this contest is to advance the art and science of obstetrics and gynecology, in accord with the principles of the International College of Surgeons and with the primary aim of the College, to extend the frontiers and elevate the standards of all branches of surgery.

Additional information may be secured from Dr. Harvey A. Gollin, whose address was given earlier.

The Chairman of the Committee on Prizes is Dr. Raymond J. Pieri, F.A.C.S., F.I.C.S.

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Gynecology
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Proctology
Proctoscopy
Radioisotopes
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The teaching faculty is comprised of members of the Attending Staff of Cook County Hospital.

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707 South Wood Street, Chicago 12, Illinois
Telephone: SEeley 3-2800

Woman's Auxiliary

United States and Canadian Sections, International College of Surgeons

REPORT OF PROGRESS

Mrs. Clifton L. Dance

Our committees have been diligently at work since the last meeting of the Board of Directors, and I take this opportunity to acquaint you with the personnel and work of our committees and our officers.

Ladies' Entertainment Committee, Mrs. Clement L. Martin, Chairman.—Mrs. Martin is already at work, planning the entertainment for the next annual Congress. In a great metropolis like Chicago, plans and reservations must be made far in advance. With Mrs. Martin at the helm, we may be sure of delightful surprises.

Constitution and By-Laws Committee, Mrs. DeLoise H. Downey, Chairman.—Mrs. Downey, who is richly endowed for this task, reports good progress. The work requires vision to see ahead for the steady growth of the Auxiliary and a balanced judgment for the practical. Each point must be considered and then reconsidered from a point of law.

Historian, Mrs. Henry W. Meyerding.—Mrs. Meyerding is particularly well qualified for the important post of recording for posterity. She is a charter member of the Woman's Auxiliary. Her husband is a past president of the United States Section of the International College of Surgeons, and both are conversant with every important event in the history of the College.

Membership Committee, Mrs. Floyd E. Keir, Chairman.—This is a year-round job, and we are fortunate in having for our chairman Mrs. Keir, who attends a good many of the Regional Meetings and often acts as our Representative at Large.

Memorial Fund Committee, Mrs. Donald L. Dickerson, Chairman.—Mrs. Dickerson is also a charter member and is a constant, devoted worker for the Memorial Fund among her many other activities.

Public Relations, Mrs. Charles W. Weigel.—This is a post that requires a dash of imagination, as our Auxiliary is still in its infancy. We are, however, growing fast, and this growth will furnish really worth-while material in due time.

Printing Committee, Mrs. Jerome J. Moses, Chairman.—Mrs. Moses has the double duty of placing orders for all printed matter and then seeing that the proper committees and officers are supplied with the printed matter they need.

Hall of Fame and School of the History of Surgery, Mrs. Chester W. Trowbridge, Chairman.—This is a comparatively new committee, appointed with the advent of the School of the History of Surgery. This school, unique in the annals of surgery, is located in the International Surgeons' Hall of Fame and offers a series of lectures by outstanding authorities and scholars in surgical history. Mrs. Trowbridge and her committee serve as hostesses at these lectures, and as might have been expected of such a genuinely hospitable person, Mrs. Trowbridge has come up with a set of recommendations to make the lectures more accessible and comfortable for the audience.

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Archives Committee.—This committee is in the process of being set up. A chairman and cabinet will be appointed.

The Officers who are serving with me for the term 1956-58 are as follows:

President-Elect: Mrs. Earl I. Carr. Mrs. Carr has served the Auxiliary as Regional Vice-President and is familiar with all phases of Auxiliary work.

Immediate Past-President: Mrs. Walter C. Burket. Mrs. Burket now serves on the Executive Committee.

Vice-Presidents: Mrs. Floyd E. Keir, Mrs. Charles W. Weigel, Mrs. Donald L. Dickerson. Each vice-president heads her own special committee, and all are of inestimable value in carrying out the special projects.

Treasurer: Mrs. Louis F. Plzak; Mrs. Jerome J. Moses, assistant. Mrs. Plzak has served the Woman's Auxiliary since its inception. Her office entails a great deal of detail work, in addition to the keeping of an accurate record of all monetary transactions. She does this so quietly and so efficiently that few of us are aware of the great amount of time she must devote to this office. Mrs. Moses assists in keeping the membership lists in order, making the corrections and changes of address and adding the new members' names as applications for membership are received.

Recording Secretary: Mrs. Adolph M. Maller. Mrs. Maller, a soft-spoken yet most capable young woman, is the record-keeper of the Auxiliary's decisions and actions; she keeps the minutes of the meetings in a careful and painstaking manner. Her minutes will be the basis of a comprehensive record for those who come after us.

Corresponding Secretary: Mrs. Clement L. Martin. Mrs. Martin is no stranger to this exacting office, having served in the same capacity before. She takes care of general correspondence, sends out all the official notices and handles all correspondence authorized by the Board of Directors and the President. The fact that she continues in office is evidence of the appreciation we feel for her fine work.

Now that you have met your governing boards, I should like to say for our entire body that we hope to interest each member, particularly those who feel that, because they live at a distance from the College Home in Chicago, they cannot enter into the activities of the Woman's Auxiliary. There are no remote sections in the International College of Surgeons. The ever-growing popularity of the Regional Meetings brings us all together. Each month your Bulletin lists the complete schedule of meetings. Look them over: Mid-Atlantic Region, Great Lakes Region, California, Eastern Region, to mention only a few.

Dr. Horace E. Ayers, Regent for the State of New York, for example, has planned the next meeting of the Eastern Region to take place at the world-famous White Face Inn in Lake Placid, New York, May 30-June 2, 1957. This will give members on the Canadian side, from the Provinces of Ontario and Quebec, an opportunity to participate as well.

Next month I plan to give you a complete list of the Regional Vice-Presidents of the Woman's Auxiliary so that you may communicate and become acquainted with members in your own territory.

—*Catherine M. Dance*

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When in Chicago, visit the Hall of Fame and the School of the History of Surgery and Related Sciences of the International College of Surgeons at 1516-1524 Lake Shore Drive, Chicago 10, Illinois.

ARGENTINE SECTION

At a recent meeting of the Argentine Section of the International College of Surgeons, a roster of new officers was elected, as were a National Regent and 27 Specialty Regents. The new officers of the Section are:

- Dr. Jorge A. Taiana, President
- Dr. José M. Urrutia, First Vice-President
- Dr. Augusto Wybert, Second Vice-President
- Dr. Raúl F. Matera, Secretary
- Dr. Aristóbulo F. Barrionuevo, Acting Secretary

Elected as National Regent for Argentina was:

- Dr. Carlos P. De Nicola

The Specialty Regents chosen by the General Assembly of the Argentine Section are:

- Dr. Roberto A. Goyenechea, Anesthesiology
- Dr. Carlos P. De Nicola, Surgery of the Head and Neck
- Dr. Ricardo Bianchi, Military Surgery
- Dr. Delfor Del Valle (h), Hepatic and Biliary Surgery
- Dr. Clemente Morel, Endocrinal Surgery
- Dr. Jorge A. Reales, Abdominal Surgery
- Dr. Benjamín Rivas Diez, Surgery of the Spleen and Hematopoietic Organs
- Dr. José Urrutia, Traumatic Surgery
- Dr. Arturo Martinez Borado, Experimental Surgery
- Dr. Francisco Javier Arias, Gastrointestinal Surgery
- Dr. Roberto Gandolfo Herrera, Gynecologic Surgery
- Dr. José M. Pelliza, Pediatric Surgery
- Dr. Juan Leon, Obstetric Surgery
- Dr. Ernesto R. Bernasconi Crámer, Ophthalmic Surgery
- Dr. Abel N. Canónico, Oncologic Surgery
- Dr. Manuel B. Galea, Oral Surgery
- Dr. Augusto Wybert, Orthopedic Surgery
- Dr. Antonio Carrascosa, Otorhinolaryngologic Surgery
- Dr. Héctor Marino, Plastic Surgery
- Dr. Manuel Casal, Proctologic Surgery
- Dr. Oscar Vaccarezza, Thoracic Surgery
- Dr. Guillermo Iacapraro, Urologic Surgery
- Dr. Eduardo Schieppati, Vascular Surgery
- Dr. Raul F. Matera, Neurosurgery
- Dr. Eduardo Schieppati, Chemotherapy and Antibiotics in Surgery
- Dr. Manuel Malenchini, Radiology and Physical Therapy in Surgery

AUSTRIAN SECTION

The 1957 Seminar Congress held by the American Medical Society of Vienna, with which the International College of Surgeons is closely affiliated, offers the following lectures (see p. 13) in the field of surgery:

PEDIATRICS

May 2-4—*Surgical Diseases of Children; Pediatric Urology; Acute Abdominal Disease*

June 3-5—*Electromyography; Common Orthopedic Problems in Childhood; Cerebral Palsy: Electroencephalography*

July 1-3—*Emergencies in the Neonatal Period: Erythroblastosis; Reabsorption Atelectasis; Hemorrhage; Acute Feeding Difficulties*

OPHTHALMOLOGY

April 4-6—*Development of Vision in Infants and Children; Ocular Motility; Perimetry*

May 2-4—*Refraction; Ocular Motility; Perimetry*

June 6-8—*Plastic Surgery of the Eye; External Diseases of the Eye; Glaucoma*

July 4-6—*Slit Lamp Microscopy; Ophthalmoscopy; Ocular Therapeutics*

Aug. 1-3—*Electrosurgical Treatment of the Eye; Ocular Cataracts; Retinal Detachment*

Sept. 5-7—*Operative Ophthalmology; Gonioscopy, Anomalies*

Oct. 3-5—*Neuro-Ophthalmology; Diseases of the Retina; Physiology of the Eye*

Nov. 7-9—*Ophthalmic Medicine; Diagnostic Examination; The Ocular Adnexae (Selected Topics)*

PATHOLOGY

April 11-12—*Systemic Pathology*
May 10-11—*Histologic Pathology*
July 12-13—*Gross Pathology*
Aug. 9-10—*General Pathology*
Sept. 13-14—*Surgical Pathology*
Oct. 11-12—*Carcinoma*

RADIOLOGY

April 25-27—*Clinical Radiation Therapy*
May 23-25—*Diagnosis, with Selected Practical Demonstrations*
July 25-27—*Therapy, with Selected Practical Demonstrations*
Aug. 22-24—*Radiology in General Practice*
Sept. 26-28—*General Radiology, with Selected Practical Demonstrations*
Nov. 21-23—*Practical Demonstrations in Diagnosis and Therapy*

OTORHINOLARYNGOLOGY

April 4-6—*Larynx and Hypopharynx: A Seminar*
May 2-4—*Anatomy of the Temporal Bone; Surgical Anatomy of the Nose; Surgical Anatomy of the Sinuses*
June 6-8—*Nasal Allergy; Pediatric Otolaryngology; Surgical Treatment of the Parotid Glands*
July 4-6—*Bronchoesophagology; Endoscopy; Malignant Disease in Otorhinolaryngology*
Aug. 1-3—*Operative Otology; Surgical Treatment of the Larynx; Surgical Treatment of the Neck*
Sept. 5-7—*Fenestration; Tympanoplasty; Rehabilitation of the Hard of Hearing*
Oct. 3-5—*Surgical Treatment of the Nasal Septum; Reconstructive Surgery of the Nose and Ear; Cosmetic Surgery of the Head and Neck*
Nov. 7-9—*Acute Sinusitis; Chronic Rhinitis; Surgical Anatomy of the Nose and Accessory Sinuses*

OBSTETRICS AND GYNECOLOGY

May 20-22—*Gynecologic Pathology; Gynecologic Endocrinology; Gynecologic Cytology*
June 24-26—*Manikin Obstetrics*
July 22-24—*Gynecology; Oncology; Female Urology*
Aug. 19-21—*Sterility; Fertility; Hormone Therapy*
Sept. 23-25—*Surgical Obstetrics; Manikin Obstetrics; Operative Gynecology*
Oct. 21-23—*Gynecologic Surgery; Wertheim Approach; Obstetric Surgery*

ORTHOPEDIC AND TRAUMATIC SURGERY

April 19-20—*Imperative Traumatic Surgery*
May 17-18—*Treatment of Congenital Orthopedic Deformities*
June 21-22—*Fractures of the Extremities*
July 19-20—*Rehabilitation*
Aug. 23-24—*Surgical Treatment of Joints*
Sept. 20-21—*Intramedullary Nailing*
Oct. 18-19—*Cranial and Spinal Injuries*
Nov. 22-23—*Surgical Treatment of the Hand*

SURGERY

April 3-5—*Surgical Errors and Safeguards*
May 2-4—*Thoracic Surgery*
June 4-6—*Gastrointestinal Surgery*
July 2-4—*Cardiovascular Surgery*
Aug. 6-8—*Neurosurgery*
Sept. 3-5—*Urologic Surgery*
Oct. 1-3—*Surgical Treatment of Liver, and Gallbladder*
Nov. 5-7—*Plastic and Oral Surgery*

BELGIAN SECTION

The first official scientific meeting of the new Belgian Section of the International College of Surgeons has been announced by the Section's President, **Dr. Georges J. G. Lambert, F.I.C.S.**, and will take place on April 6 and 7, 1957. The preliminary program is as follows:

Saturday, April 6

9:30 a.m. Opening of the Congress by the President.

9:45 a.m. *Biomechanism of the Treatment of Fractures*
Prof. Frederic Pauwels, Aachen

10:30 a.m. *Treatment of Pseudarthrosis of the Femoral Neck*
Dr. George Chapchal. Utrecht

11:00 a.m. *Fractures of the Knee*
Dr. A. Nicolet, Bern

11:45 a.m. Discussion of the reports presented.

2:30 p.m. *Fractures of the Knee: Therapeutic Considerations*
Colonel Surgeon Duchesne, Liège

3:00 p.m. *The Nailing of Fractures of the Lower Extremities*
Prof. Max Herzog, Krefeld
3:30 p.m. *The Osteosynthesis of Fractures*
Prof. Charles Mirallié, Nantes
4:00 p.m. Discussion of the reports presented.
4:30 p.m. *Infiltration Anesthesia and Operative Section of the Pudendal Nerve for Pelvic Pain*
Prof. Raymond Darget, Bordeaux
5:00 p.m. Motion picture on the treatment of fractures (in color).
7:30 p.m. Official reception and banquet.

Sunday, April 7

9:45 a.m. *Electrolytes: General Considerations*
Prof. Hamburger, Paris
10:15 a.m. *Postoperative Thrombosis and Embolism: Personal Conceptions*
Dr. Marc Iselin, Paris
10:45 a.m. *Personal Researches on Thrombosis*
Drs. J. Stalport and Edouard E. M. Nicolas, Huy
11:30 a.m. *Emergency Embolectomy of the Lower Extremity: Report of Three Cases*
Dr. G. Lambert, Seraing

COLOMBIAN SECTION

From Dr. **Antonio Ordóñez Plaja**, F.I.C.S., Secretary of the Colombian Section of the International College of Surgeons, comes the news that the Colombian Section, following the example of the College, has sent the sum of $1,000 to the Comite Pro-Hungria as a gift from the Section. The gift was granted at the Club Medico of Bogota on Dec. 24, 1956.

"We count it the greatest satisfaction,"

Left to right, Dr. Giuseppe Figlioli; Prof. Dr. César A. Pantoja, F.I.C.S., Member of the Executive Council, Colombian Section, and of the International Board of Governors; Prof. Dr. Pedro Eliseo Cruz, F.I.C.S., President of the Colombian Section and of the Colombian Association of Surgeons; Sra. de Rosemberg of the Comité Pro-Húngaros Libres, and Dr. Antonio Ordóñez Plaja, F.I.C.S., Secretary of the Colombian Section.

Left to right, Dr. Figlioli; Prof. Dr. César A. Pantoja; Prof. Dr. Pedro Eliseo Cruz; Sra. de Rosemberg, and Dr. Antonio Ordóñez Plaja.

writes Dr. Plaja, "to express in this form our sympathy and admiration for the people of Hungary in their courageous stand against oppression."

INDIAN SECTION

The Indian Section of the International College of Surgeons convened for its Third Annual Meeting on Jan. 1, 1957, at the M. G. M. Medical College in Indore, Rajasthan. The first portion of the meeting was devoted to a business session, at which the new officers of the Indian Section were elected for the coming term. They are:

- **Dr. A. V. Baliga**, F.R.C.S. (Eng.), F.I.C.S., of Bombay, President
- **Dr. C. P. V. Menon**, F.I.C.S., Madras, President-Elect
- **Dr. A. E. DeSa'**, F.R.C.S. (Eng.), F.I.C.S., Bombay, Treasurer
- **Dr. V. G. Vaishampayan**, F.I.C.S., Sholapur, Secretary, and to succeed Dr. C. P. V. Menon as Vice-President
- **Dr. K. G. Munsif**, F.R.C.S., F.I.C.S., Bombay, Vice-President
- **Dr. R. H. Betts**, F.A.C.S., F.I.C.S., Professor of Thoracic Surgery, Christian Medical College Hospital, Vellore, Madras, Vice-President
- **Dr. B. N. Sinha**, F.R.C.S., F.I.C.S., Lucknow, Vice-President
- **Dr. S. K. Sen**, F.R.C.S., F.I.C.S., New Delhi, Vice-President

The new Executive Committee of the Indian Section consists of the President, President-Elect, Secretary, Treasurer and the Immediate Past President, **Col. K. G. Pandalai**, F.R.C.S. (Eng.), F.I.C.S., of Madras.

The newly elected members of the Credentials Committee are Dr. A. V. Baliga, Col. K. G. Pandalai, Dr. A. E. DeSa' and **Dr. R. N. Cooper**, F.R.C.S. (Eng.), F.I.C.S., Bombay. The new members of the Finance Committee are Dr. A. V. Baliga, Dr. A. E. DeSa' and **Dr. G. M. Phadke**, F.R.C.S. (Eng.), F.I.C.S., Honorary Surgeon, K.E.M. Hospital, Bombay.

The business session of the meeting concluded with a report, delivered by Col. Pandalai, on the Twenty-first Annual Assembly of the United States and Canadian Section, held in Chicago on Sept. 9-14, 1956, which he attended. Dr. A. E. DeSa' reported on the reception and entertainment that had been planned for the American surgeons who visited Bombay in the course of the Second Around-the-World Air Tour of the International College of Surgeons from Nov. 12 to Nov. 15, 1956.

After the business session, a short scientific session took place. The following papers were presented: "Brain Abscess," **Dr. B. Ramamurthi**, M.S., F.R.S.E., F.I.C.S., Madras; "Analysis of 100 Consecutive Cases of Mitral Commissurotomy, with up to Three Years of Follow-up Records," **Dr. S. K. Sen**, F.R.C.S. (Eng.), F.I.C.S., Delhi; "Cancer of the Bladder," **Dr. A. Venugopal**, M.B., M.S., F.A.C.S., F.I.C.S., Madras, and "Some Surgical Aspects of the Upper Eyelid," **Dr. N. T. Mascati**, F.I.C.S., Mascati Eye Hospital, Surat.

The program of the Third Annual Meeting of the Indian Section closed with a luncheon for the members and guests participating in the conference.

PAKISTANI SECTION

The National Assembly of the Pakistani Section of the International College of Surgeons convened at the Pakistani Institute of International Affairs in Karachi on Nov. 16, 1956. Surgeons from many parts of Pakistan were in attendance. In addition, a group of American surgeons, under the leadership of **Dr. Arthur Neal Owens**, F.A.C.S., F.I.C.S., official representative of the International College of Surgeons, also attended the Assembly. Owing to the unavoidable absence of **Lt. Col. A. K. M. Khan**, F.R.C.S. (I.), F.A.C.S., F.I.C.S., President of the Pakistani Section, the first morning session was presided over by **Dr. M. A. H. Siddiqui**, M.A., M.S., F.R.C.S. (Eng.), F.I.C.S.

The program for this session consisted of three lectures, illustrated by means of slides and diagrams; the first of these was entitled, "Some Experimental Evidence of Protection Against Radiation Damage," presented by **Dr. M. H. Toosy**, Ph.D., F.I.C.S., Professor of Anatomy, Nishtar Medical College, Multan, West Pakistan. **Dr. Arthur Neal Owens**, F.A.C.S., F.I.C.S., Head of the Department of Plastic Surgery at Tulane University, New Orleans, Louisiana, discussed problems that arise in plastic surgery. **Lt. Col. Said Ahmad**, F.R.C.S. (Eng.), F.I.C.S., Professor of Surgery at Dow Medical College in Karachi, delivered a paper on the late repair of injuries of the posterior portion of the urethra. Brief discussions followed the presentation of each of the papers.

The second morning session met under the presidency of **Dr. Riaz-i-Qadeer**, F.R.C.S., F.I.C.S., Professor of Surgery at King Edward Medical College in Lahore. **Dr. M. A. H. Siddiqui**, M.A., M.S., F.R.C.S. (Eng.), F.I.C.S., Professor of Surgery at Dow Medical College in Karachi, presented a paper entitled, "The Problem of Peptic Ulcer in Pakistan." The second lecture of this session, entitled "Fracture of the Penis," was delivered by **Dr. Amanullah Khan**, F.R.C.S. (Eng.), F.I.C.S., Associate Surgeon at Dow Medical College and the Civil Hospital of Karachi.

After Dr. Siddiqui's lecture, **Dr. W. J. Kiser** of Wichita, Kansas, discussed current methods for the treatment of peptic ulcer in the United States.

Col. Jalal M. Shah described [illegible]

Mar. 15—*Anorectal Abscesses and Fistulas*
Dr. Lino Torre
Malignant Tumors of the Rectosigmoid: Diagnosis and Operative Treatment
Dr. J. Soler-Roig

Mar. 18—*Modern Concepts of Hepatic Anatomy: Indications and Technic of Hepatectomy*
Dr. A. Sitges

Mar. 20—*Surgical Treatment of Hydatid Cyst of the Liver*
Dr. Canals Maynor
Benign and Malignant Tumors of the Liver
Dr. F. Vilardell

Mar. 22—*General Physiopathology of the Portal System: Methods of Investigation (Splenoportographic, Portographic and Manometric)*
Drs. A. Modolell and A. Sitges

Mar. 25—*Syndrome of Portal Hypertension: Clinical Types*
Dr. Lino Torre

Mar. 27—*Surgical Treatment of Portal Hypertension: Emergency Methods for Hemorrhage Due to Esophageal Varices: Indications for Splenectomy and Various Technics of "Shunt"*
Drs. A. Sitges and Lino Torre

Mar. 29—*Surgical Anatomy of the Spleen: Operative Approaches and Technic of Splenectomy: Diagnosis and Treatment of Splenic Trauma*
Dr. Lino Torre
Indications for Surgical Treatment of Hypersplenism
Dr. J. M. Alcover

April 3—*Primary and Parasitic Cysts of the Spleen: Benign and Malignant Splenic Tumors*
Dr. A. Moliner
Anatomic Review: Approaches and Technics for Pancreatectomy: Embryologic Considerations and Principal Congenital Anomalies
Dr. A. Sitges

April 5—*Acute Pancreatitis: Pathogenesis, Diagnosis and Treatment*
Dr. Lino Torre

April 8—*Chronic Recurrent Pancreatitis: Definition, Diagnosis and Treatment*
Dr. A. Sitges

April 10—*Traumatic Lesions, Fistulas and Lithiasis of the Pancreas*
Dr. A. Moliner
Cysts and Pseudocysts of the Pancreas
Dr. M. Miserachs

April 12—*Benign and Malignant Tumors of the Pancreas, and Duodenum: Radical and Palliative Operations for Carcinoma in This Region*
Dr. J. Soler-Roig

April 24—*Acute Peritonitis: Pathologic Physiology, Clinical Forms and Treatment in General*
Dr. Lino Torre
Tuberculous Peritonitis
Dr. I. Serés

April 26—*Nonspecific Mesenteric Lymphadenitis and Tuberculosis*
Dr. A. Moliner
Retractile Mesenteritis: Cysts and Tumors of the Mesentery: Epiploic Pathology (Epiploitis, Torsion, Idiopathic Infarct and Tumors)
Dr. A. Sitges

April 29—*Acute Abdominal Disease: Concept and General Considerations: Criteria and Opportunity for Operation*
Dr. J. Soler-Roig

May 3—*Structural Scheme of the Abdominal Walls with their Orifices and Trajectories: Technic of Laparotomy: Prophylaxis and Treatment of Eventration and Evisceration Following Laparotomy*
Dr. Lino Torre
Abdominal Syndromes of Vascular Origin
Dr. R. E. de Sobregrau

May 6—*Abdominal Contusion: Abdominal and Abdominothoracic Injuries*
Dr. P. Arqué
Postoperative Treatment in Abdominal Surgery
Dr. J. Reventos

May 8—*Inguinoscrotal and Crural Hernia*
Dr. J. Montaner

May 10—*Omphalocele: Umbilical and Epigastric Hernias*
Dr. R. Balcells
Strangulated Hernia: Types and Surgical Treatment
Dr. J. Montaner

The wide scope of this program and the well-known ability of the lecturers are consonant with the quality of the service offered the College by Prof. Soler-Roig. We are sure that those who are able to take advantage of this fine course will long remember it as a unique scientific experience.

Medical News Front

Congress of Pan American Association of Ophthalmology

Symposiums on three officially selected subjects will comprise a leading feature of the program of the Fourth Interim Congress of the Pan American Association of Ophthalmology, which is to be held in New York City on April 7-10, 1957, in joint session with the National Society for the Prevention of Blindness. Headquarters of the Congress will be at the Hotel Statler.

The three officially selected topics are: "Diseases of the Ocular Fundus," "Ophthalmic Surgery" and "Therapeutics in Present-Day Ophthalmology." Papers on many other topics of ophthalmologic interest will also be offered, as will be motion pictures of surgical operations on the eye, surgical cinics in hospitals of New York and technical and scientific exhibits demonstrating research work that is being conducted on a number of subjects.

Seventh International Cancer Congress

The International Union Against Cancer is sponsoring the Seventh International Cancer Congress in London, England, on July 6-12, 1958, at the Royal Festival Hall and under the Presidency of Sir Stanford Cade. The two main sessions of the Congress will deal with the experimental aspects of cancer and with the clinical aspects and the control of cancer. Special emphasis will be placed on hormones and cancer, chemotherapy, carcinogenesis and pulmonary carcinoma. Proferred papers will only be considered if submitted with an accompanying abstract before October 1957 and if dealing with new and unpublished work.

Registration forms and a preliminary program will be available early in 1957 on application to: The Secretary General, Seventh International Cancer Congress, 45 Lincoln's Inn Fields, London, W. C. 2, England; J. H. Maisin, President, Union International Contre le Cancer, Voer des Capucins, 61, Louvain. Belgium, or Harold Dorn, Secretary-General, Union International Contre le Cancer, National Institute of Health, Bethesda 14, Maryland, U. S. A.

Postgraduate Assembly on Fertility and Sterility

The New York Medical College-Metropolitan Medical Center announces the first American Postgraduate Assembly in Fertility and Sterility. It will be held in New York City, at the College and affiliated hospitals, on May 18-31, 1957. Emphasis in the course will be placed on the clinical aspects of human infertility, including recent advances in diagnosis and therapy. A unique feature will consist of special sessions, devoted to methods and problems in the organization and administration of sterility clinics, services and teaching programs. The program of the assembly will consist of lectures, demonstrations, round-table discussions, operative clinics to demonstrate culdoscopy and tubal surgical therapy, ward rounds and specialty-clinic case presentations. The course will be conducted by the Department of Obstetrics and Gynecology, Dr. Martin L. Stone, Director, and is under the supervision of Dr. Abner I. Weisman, Chief of the Section of Fertility and Sterility. The faculty of the medical college and eighteen noted guest professors from North and South America will make up the teaching staff. The course, primarily designed for those already interested in infertility, has been scheduled for the end of May so as to allow the registrants the opportunity to attend the annual scientific meetings of the American Society for the Study of Sterility, The Endocrine Society and the American Medical Association, which will be held in New York starting May 31, 1957. Further information and applications may be secured by writing to Dr. Ralph E. Snyder, Dean, New York Medical College, 1249 Fifth Avenue, New York 29, New York, Registration is limited, and the tuition is $150.

Bahamas Medical Conference at Easter Season

The Bahamas Branch of the British Medical Association, at its last monthly meeting, approved the holding of another Bahamas Medical Conference during the week after Easter, April 23-30, 1957. The British Colonial Hotel and the Princess Margaret Hospital in Nassau will house the conference. Lectures on weekdays will be given from 9:30 to 11 a.m. and from 5:30 to 7 p.m. Two evening lectures and two meetings at the hospital have also been scheduled. Full particulars about the conference may be secured by writing to Dr. B. L. Frank, Bahamas Medical Conference, P. O. Box 148, British Colonial Hotel, Nassau, Bahamas.

Public Health Training Program Gets Under Way

The United States Public Health Service has announced the names of the national advisory committee to assist in a new public health training program voted by Congress at the last session and has been duly constituted. The three-year training program provides funds to enable physicians, nurses, engineers, and other professional health personnel to secure graduate or specialized training in public health.

At the time of this report, over 300 traineeships, amounting to nearly $1,000,000, have been awarded, either directly by the Public Health Service or through grants to training institutions. Two hundred and sixty-two persons are already attending academic institutions with the funds provided for the first year of the program.

Members of the National Advisory Commitee on Public Health Traineeships met with Surgeon General Leroy E. Burney recently to discuss plans and policies for awarding traineeships for the 1957-1958 academic year.

Eleventh Annual Symposium on Fundamental Cancer Research

The Eleventh Annual Symposium on Fundamental Cancer Research will be offered by the University of Texas, M. D. Anderson Hospital and Tumor Institute, Texas Medical Center, Houston 25, Texas, on March 7-9, 1957. The general topic for the symposium is, "Viruses and Tumor Growth." Many outstanding investigators in the field of cancerology will present reports on their observations and studies.

Second World Conference on Medical Education to Be Held in 1959

The World Medical Association, which sponsored the First World Conference on Medical Education in London in 1953, is planning a second conference on the same pattern, to be held in Chicago Aug. 30-Sept. 4, 1959. The theme of the Second World Conference will be "Medicine—A Lifelong Study."

The Program Committee, under the chairmanship of Dr. Victor Johnson, Director of the Mayo Foundation for Medical Education and Research, University of Minnesota Graduate School, invites members of medical schools and faculties; members of national medical associations and their medical education committees, and organizations and individual persons interested and qualified in medical education to submit topics and problems pertinent to the continuing education of a doctor after graduation from medical school.

Four general section subjects are currently being considered. These are: (1) Basic Clinical Training for all Doctors; (2) Advanced Clinical Training for General and Specialty Practice; (3) Education for Research and Teaching, and (4) Methods of Continuing Medical Education Throughout Life.

Dr. Raymond B. Allen, Chancellor of the University of California at Los Angeles, has been named President of the Second World Conference. At the First

World Conference the late Sir Lionel Whitby of the United Kingdom was President.

Simultaneous translation of English, French, Spanish and, if feasible, German will make possible the stimulating exchange of ideas and information.

The Program Committee wishes to provide the Conference with competent representative speakers and participants for panel and group discussion from every area of the world, speaking on thought-provoking topics and considering problems that concern every doctor who has completed his basic medical education, regardless of his age, mode of medical practice or specialized interests or education. To accomplish this, the Committee needs suggestions and guidance in the selection of conference topics and eminent doctors qualified to speak on these subjects. Every medical organization of the world is cordially invited to submit the names of these experts and the area of each expert's proficiency, as well as topics and subjects, the discussion of which at such a world forum would prove useful in elevating the standards of medical education the world over.

Suggestions should be addressed to The World Medical Association, 10 Columbus Circle, New York 19, New York.

American Goiter Association to Convene in May

The 1957 meeting of the American Goiter Association will be held in the Hotel Statler, New York, New York, May 28, 29 and 30, 1957.

The program for the three-day meeting will consist of papers and discussions dealing with the physiology and diseases of the thyroid gland.

The Secretary of the Association is Dr. John C. McClintock, 149½ Washington Avenue, Albany 10, New York.

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For information pertaining to qualifications for
Fellowship or Associate Membership
in the

Canadian Section, International College of Surgeons

please write
E. N. C. McAmmond, M.D.
Suite 2, 1701 West Broadway
Vancouver 9, B. C., Canada

IN MEMORIAM

ERNEST NOVAK, M.D., F.I.C.S.

1899-1956

Since 1952, when Dr. Ernest Novak became a Fellow of the International College of Surgeons, his real and vital personality has emerged little by little from his many letters. The concept of him as a person casts unreality on the news of his untimely death in West Pakistan on Oct. 18, 1956. The events of his life symbolize the unsettled state of our world, and it is fitting for us to review them in remembering him.

He was born in Kolozsvár, Hungary, on May 15, 1899, and completed his preliminary schooling in the city of his birth. As an extremely young commissioned officer, he saw active service in World War I. After his term of military duty, he began his medical studies at the Medical College of the University of Budapest, where he earned his degree of Doctor of Medicine in 1924.

Between the two world wars, as he related in his letters, he had the good fortune of working for a long period in the clinics of many leading surgeons. His teacher, the ingenious Prof. Verebélyi, sent him for further surgical training to Vienna and Germany. For several years he also studied in the clinics of Gosset, Voronoff and Hartmann in Paris and with Donati in Milan. When Kolozsvár, the capital of Transylvania, once more became part of Hungary, he was named Professor of Operative Surgery.

For eighteen years Dr. Novak worked as a surgeon and teacher of surgery in his native land, contributing nearly a hundred scientific papers to Hungarian and German professional journals and writing six books on various surgical topics.

During World War II he was again drawn into military service. He was surgical advisor to the Hungarian Army and President of its Medical Council. Referring to this period in one of his letters, Dr. Novak said, "We in the army experienced but little from the Nazi regime; we fought against communism and knew why; when the battle for Hungary was lost, we retreated to Germany; the collapse reached me in Halle. . . ."

As a stateless person whose country had collaborated with the Nazis, he was not entitled even to those benefits that were accorded to displaced persons. In the aftermath of war he was assigned to work in a large hospital for displaced persons, serving as Chief Surgeon of the hospital. Three years after the end of the war, he was able to secure a visitor's visa for a short stay in Ireland. Immigration regulations, however, made it impossible for him to make any permanent plans either in Ireland or in England.

He neither wished nor thought it wise to attempt to return to Hungary, which, as he put it, was laboring under a continuation of its thousand-year history of "countless dreadful experiences." He was sure that his country had adopted its political countenance under duress, and fervently hoped that "some happy change" would again permit Hungarians to continue their "national life where we lost it by losing the war." To such a change and to such a time he looked forward.

Fully four years after the war had ended, he was accepted into Pakistan. There he found safe haven, but not happiness—not the happiness that people experience when they are performing the work of their choice and are entirely free to select their way of life and their place of residence. The intense heat and periodic heavy rains of the jungle were often on Dr. Novak's mind and added many unfamiliar complications to his work. He found himself working under the yoke of an anachronistic surgical heritage that had been rooted into his new surroundings decades earlier, and sorely missed the working facilities and teamwork to which he had grown accustomed.

Nevertheless, his work held some fascination. He considered his patients, for example, "the fulfillment of the bad risk," for many of them were afflicted with anemia, with deficiencies in protein and vitamins, and with a host of chronic diseases—some of them strange—that threatened the success of his operative care of them. There was a certain amount of intrigue involved in applying his surgical knowledge in the face of all odds, and Dr. Novak maintained that all of his good results were simply "inexplicable." This fascination, with all its known and unforeseen ramifications, was never enough to kill his hope of working again some day in an environment that would be more familiar. Clearly there was a strong element of homesickness involved.

Long lapses were not unusual in Dr. Novak's correspondence. Once, when asked why he had not written, he replied, "Because I am not Goethe." He was referring to the poet's statement that it was easy to write when one was so inclined, but a matter of great personal pride to him (Goethe) to write even when he had no inclination to do so. Dr. Novak's letter came only after he had emerged from a period when he was "in a mood to read," and he said that even though he had many things he wanted to say, he was not "forcing" himself to say them since he was not so inclined. "I think," he went on, "that it is a symptom of mental aging," a "shameful" prospect, for despite six years of uninterrupted hard work he had just been "pronounced exceedingly fit" by his "conservative English insurance company." He took the evaluation with a grain of salt, being sure that "two world wars, three death sentences and the loss of everything, including my country, could not pass over me without a trace."

At the time that he wrote this letter he was unhappy with his work, which was not at all the kind of scientific investigation he wished most to pursue. He added, "I remember another famous story—that of Edison, who, when forced to work on synthetic petrol instead of his beloved electricity, broke down and shortly died."

Another long interval of silence followed. Then early last spring, the College received a brief notice of a change of address, from East to West Pakistan. Nothing more. Eight months later, the totally unexpected news of Novak's death reached the College. Perhaps it was not chance but intuition that led him to retell his brief story about Edison.

FOUNDED BY DR. MAX THOREK

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General Surgery

Surgical Management of Gastric and Duodenal Ulcer in Japan

TSUNERO TANIGUCHI, M.D.*

CHIBA, JAPAN

WHEN ulcer occurs in the stomach or the duodenum, it is essential to eradicate the patient's fear of its recurrence and of possible malignant change, since surgical intervention is indicated for such patients. On the basis of this principle, it would seem quite natural that an ulcer must be removed if cure is desired. One must keep in mind, however, the complications that follow surgical treatment of these lesions. Among them, postoperative peptic ulcer is the most significant and has posed a problem concerning the present treatment of ulcer of the alimentary tract. Patients with postoperative peptic ulcer suffer unbearably and are always obsessed by the danger of perforation or penetration. What is worse, the difficulties of reoperation in such a situation cause the surgeon great anxiety. Recalling 28 patients with postoperative peptic ulcer whom I have studied for the past few years, I am impressed by the fact that the majority of them have undergone gastroenterostomy, and that the next largest group consists of those treated by gastrectomy without removal of the ulcerated area (Table 1). Another interesting point is the fact that in most of the cases there was a history of duodenal ulcer prior to the initial operation. These facts, as well as the difficulties of reoperation in such circumstances, have led me to realize the

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*Associate Professor of Surgery, Nakayama's Surgical Department, School of Medicine, Chiba University, Chiba.
Submitted for publication Oct. 16, 1956.

necessity of establishing an ulcer procedure that is sufficiently radical to relieve the patient completely.

At present, gastrectomy is the prevailing method of surgical treatment for ulcer of the stomach or the duodenum. There is ample reason, however, for the statement that the treatment of duodenal ulcer must be examined all over again from the point of view of curability. Only too frequently, when the surgeon finds it difficult to remove these lesions, he resorts to a conservative method, gastrectomy, leaving the ulcer *in situ*. In such instances the patient's fear of postoperative peptic ulcer is always present, even though latent, throughout his life.

Advantages of the Billroth I over the Billroth II procedure have been emphasized frequently up to the time of writing: earlier operation, less operative intervention and better results. From this point of view, it is undoubtedly true that the Billroth I procedure is the better, provided that radical resection is feasible by this method or a modification of it. To meet the aforementioned criteria, an operative method has been developed by K. Nakayama. In his modification of the Billroth I procedure three anchoring sutures to the head of the pancreas are used to guard against undue tension at the suture line.

Nakayama's Gastric Resection.—Since this method is a modification of the Billroth I procedure, it naturally preserves some merits of the original Billroth I gastrectomy:

1. Digested food passes through the duodenum, where it is thoroughly mixed with duodenal juices. This is obviously a physiologic process.

2. Complete function of the duodenum, the most important organs for absorption of iron, is assured.

3. There is little fear that peptic ulcer will follow operation by this method.

4. The incidence of postoperative complications or complaints, such as the dumping syndrome, is reduced by the use of this method.

5. Operative intervention is limited to the upper part of the abdomen, and manipulation is easier than in other procedures.

On the other hand, the original Billroth I gastrectomy has its shortcomings:

1. A fear of leakage from the suture line, due to excessive tension, is always present, especially in patients who undergo radical excision of a duodenal ulcer or massive resection of the stomach.

2. Stricture formation at the anastomotic portion is another complication, often developing in those cases in which two-layer sutures are employed at both the anterior and the posterior wall to eliminate leakage.

These disadvantages are completely eliminated by employing the operative method developed by Nakayama. The characteristics of his method are as follows:

1. Three anchoring sutures are placed between the posterior wall and the head of the pancreas, so that the stump of the gastric pouch is approximated to that of the duodenum. Leakage due to tension at the anastomotic portion is therefore obviated.

2. One-layer sutures at the posterior wall of the anastomotic portion not only extend the limits of resectability in cases of duodenal ulcer but eradicate the risk of postoperative stricture formation.

3. The anastomotic portion is completely covered with the pancreas on both the upper and the lower portion, thus insuring minimal chance of leakage.

As has been mentioned, the important feature of this method is its maximum utilization of the pancreas. It is therefore necessary, in evaluating the technic, to understand the condition of this gland after surgical intervention.

Evaluation of Fears Associated with This Operative Method.—*a. Anatomic Re-*

lationship Between Anchoring Sutures and the Pancreatic Duct: To acquire a better understanding, the pancreas may be divided in the following manner (Fig. 1): First, assuming the adherent portion of this gland with the duodenum to be a zone in subdividing this gland, denoted as *C*. The portion to the right of portion *C*, such as the isthmus, the tuber omentale and others, are designated by capital letters *D*, *E*, etc., respectively. Anchoring sutures are most commonly placed into portion *E*, and next commonly into portion *D* or *C*. Roentgen studies and measurements of consecutive transections of this gland were done in order to ascertain the precise location of the pancreatic duct. The roentgenogram of the pancreas taken in the ventrodorsal direction revealed that the main duct ran along the middle portion of this gland, meandering to some extent. Another roentgenogram, taken in the craniocaudal direction, revealed that the main duct ran dorsally in the head of this gland (Fig. 2). The needle seen in this picture indicates the site of the anchoring sutures. Consecutive transections used in this study were obtained from the specimen which had been treated with solution of formaldehyde after the injection of red opaque substances into the main duct. Table 2 presents the data on location of the main duct obtained from 12 fresh corpses. It will be noted that the head of the pancreas, portion *A* and *B*, is wider, while the isthmus, portion *D*, is the narrowest. It will be understood also that the main duct runs dorsally in the head of the pancreas and that it is not compromised by these anchoring sutures, placed at most only 2 mm. deep.

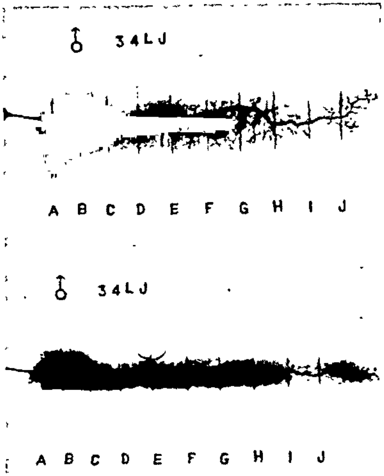


Fig. 1.—Roentgenograms of pancreatic duct. The needle indicates the site of anchoring sutures.

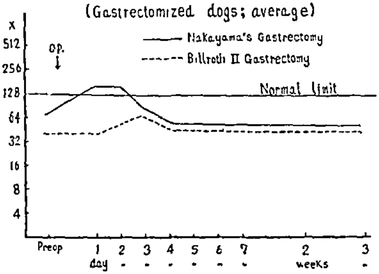


Fig. 2.—Serum amylase concentration.

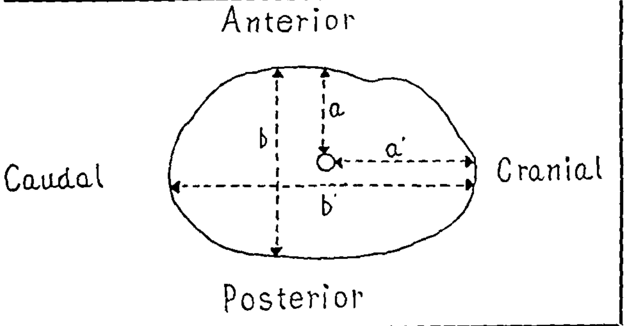
b. Histologic Changes: Histologic study was done in both animal and clinical cases in order to pursue the postoperative changes of the pancreas. In experiments on dogs, a consecutive observation was carried out for one week to six months after operation by this method. Clinical study was also done with patients who died of some complication not involving this gland. This study indicated the following facts: In one week there occurred an adhesion between the gastric and the

TABLE 1.—*Number of Patients with Postoperative Peptic Ulcer Studied from August 1946 to February 1954*

Operative Method	*Gastroenteroanastomosis*	*Gastrectomy (Billroth I)*	*Gastrectomy (Billroth II)*	*Total*
Duodenal Ulcer	13	4	0	17
Gastroduodenal ulcer	1	0	1	2
Gastric ulcer	1	0	0	1
Total	15	4	1	20

TABLE 2.—*Location of the Main Pancreatic Duct in Consecutive Transections*

	A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*
a	11.8	10.3	8.3	6	8	7.3	7.8	5.6	8.5	6.3 mm
b	19.6	21	15.3	11	16.1	16.3	17.3	15	15.8	13.8
a′	15.8	18.3	12.1	18.6	12.5	13.5	12	15.6	13.8	14.3
b′	40.6	37.3	30	25.8	29.3	31	30	28	26.8	28.3



pancreatic serosa, with infiltration of round cells and the advent of connective tissues near the anchoring sutures. Slight atrophy of the pancreas was observed in the vicinity of these sutures, while pronounced atrophy was present only at the very tiny portions sutured. No abnormalities were noted in the liver.

c. *Evaluation of Operative Intervention on Pancreatic and Hepatic Function:* 1. *Animals.* A comparison of results of tests for fasting blood sugar and serum amylase was made between two groups, namely, one consisting of dogs on which the Billroth II procedure had been done and no direct surgical attack had been made on the pancreas itself, and the other consisting of those which had undergone Nakayama's gastrectomy.

The serum amylase concentration, slightly increasing during the first few days in the latter group, returned to the preoperative level in five days and maintained the normal level thereafter (Fig. 3). The following additional tests were made: the insulin administration test, intravenous dextrose administration test, a determination of the cholesterin-phosphorus ratio and the bromosulfalein test. None showed appreciable differences in the results.

2. *Clinical Evaluation:* The aforementioned tests were also performed over a period of two weeks after operation as well as over the period of follow-up study on the patients treated by the Nakayama technic, fasting blood sugar level, serum and urinary amylase concentration, insulin administration test, dextrose duplicate administration test, serum Co and Cd reaction, bromosulfalein test and hippuric acid synthesis.

On the basis of this study, it was ascertained that few ill effects on pancreatohepatic function occurred after use of this operative method, and that no great risk associated therewith would be present throughout the postoperative period.

Advantages of the Method.—1. Resectability: Statistical surveys were made in 1034 cases of ulcer in which the patients were operated on in Nakayama's Clinic from August 1946, to February 1954. The data in Table 3 show the results. As is shown in Figure 4, ulcer occurs frequently below the pyloric ring. The upper portion of the duodenum, located between the pyloric ring and the papilla of Vater, may be subdivided into three zones for purposes of discussion. Those lesions located in the upper third (66.5 per cent of all cases), were resectable even by conventional methods, while perforated lesions in the same zone, lesions in the middle third (26.3 per cent of all cases), and lesions in the lower third (6.7 per cent of all cases) were not resectable by the conventional method in more than half.

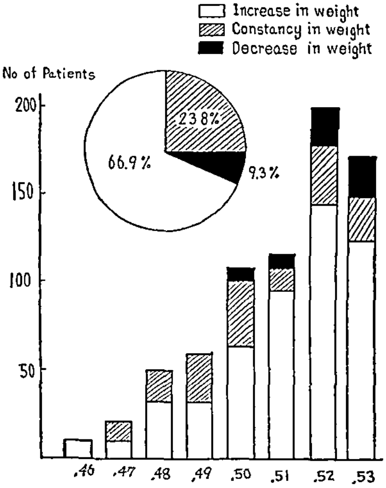


Fig. 4.—A survey of body weight in the follow-up period.

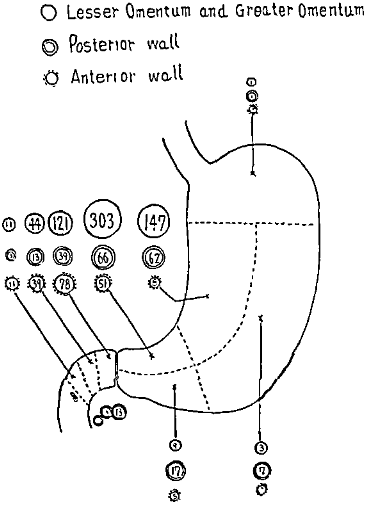


Fig. 3.—A survey of the distribution of peptic ulcer.

Comparison of resectability rate between Nakayama's Clinic and the main Japanese hospitals is as shown in Table 4, from which it will be easy to understand how a high degree of resectability is permitted by this operative method, especially among patients with duodenal ulcer. This high resectability rate, one of the most prominent features of the Nakayama method, is effected by providing one layer of posterior sutures and anchoring sutures to the head of the pancreas.

2. *Operative Mortality Rate:* The operative mortality rate is another criterion on which an evaluation of an operative technic is made. Table 5 indicates the statistical surveys covering

tassium with lack of vitamin B also causes myocarditis. Deficiency of both potassium and vitamin B, however, does not cause any pathologic change. This illustrates the importance of malnutrition in a hot climate.

The temperature in British Honduras varies betweeen 70 and 100F. During the hot weather some people complain of heat, but it is interesting to note that *all* complain when the temperature suddenly drops from 95 to 75F. They all agree that the drop of temperature is harmful to them and indeed they suffer easily from common inflammation of the upper part of the respiratory tract and, which is more important from the surgical point of view, this fall in temperature brings old and new urologic patients to the hospital with old or recurrent retention of urine. Surgeons in tropical countries have learned from experience that during the so-called "winter" beds must be reserved for such patients.

Tropical Diseases.—Tropical diseases, roughly speaking, can be divided from the etiologic point of view into two groups, bacterial and parasitic. The aspect of the first group has changed considerably in recent years. The introduction of penicillin and other antibiotics has diminished the tropical surgical material to a great extent. Many complicated operations described in old textbooks for treatment of bacterial infections of the urinary and digestive organs now belong to the past. Painful cautery and the dilatation of strictures, for instance, are gradually disappearing from the operating list.

Of the remaining infective diseases that require surgical treatment, I should like to mention that lymphogranuloma venereum may cause secondary stricture of the rectum in the female, requiring excision of the rectum in cases of severe involvement (Fig. 1). I should like also to stress the fact that chronic tropical inflammatory lesions may become malignant, though this is rare. Squamous cell carcinoma may appear in patients with leprosy, lymphogranuloma venereum, yaws, leishmaniasis, tropical ulcer or chronic balanitis. On the other hand, the aforementioned diseases, if treated with antibiotics or modern chemotherapeutic drugs, do not produce any gross lesions in which malignant change may ocurr.

The great revolution in medicine brought forth by the discovery of antibiotics has not only made possible the successful treatment of bacterial infections but has allowed time to pay more attention to nonbacterial diseases, particularly neoplastic and parasitic diseases, which now take a more prominent position in tropical surgery.

Recent achievements in preventive medicine and raised standards of hygiene diminished considerably the incidence of parasitic disease. Unfortunately, many of them still exist, among which the most common are malaria, ascaris infestation and amebiasis.

In spite of increased knowledge of malaria and the discovery of many new anti-

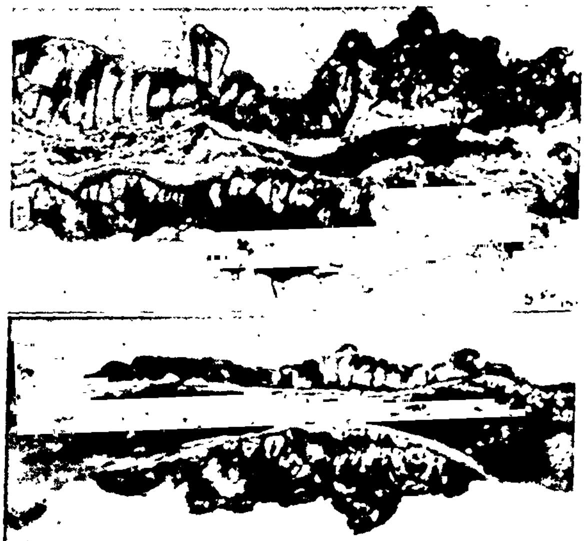


Fig. 1.—Rectal stricture due to lymphogranuloma venereum Both patients were female, and in both the condition was chronic. (*Photographs supplied by Prof. K. R. Hill*).

malarial drugs, every surgeon in the tropics has to suspect malaria as a cause of fever in newly admitted or postoperative patients. Examination of the thick blood film fortunately indicates the proper diagnosis, and treatment can be instituted at once. I have observed several cases of minor trauma in which, after admission to the hospital, there has been fever and malaria parasites have been present in the blood.

Rupture of the spleen, although rare in British Honduras, still occurs. Splenectomy, performed as early as possible before the catastrophic intraperitoneal hemorrhage has occurred, is a life-saving measure.

Most common, from the surgical point of view, is infestation by worms. It would hardly be an exaggeration to state that the majority of children in tropical countries, if not all, have intestinal worms. These poor children come to the hospital with a great variety of abdominal disturbances, ranging from violent symptoms of acute abdominal disease to mild indigestion and malnutrition. Infestation with Ascaris lumbricoides often demands surgical intervention. In my practice in British Honduras I have had to perform several laparotomies on children. They were admitted to the hospital with symptoms of acute obstruction, peritonitis or appendicitis and required emergency operations. In 1 case of obstruction I discovered that this was caused by about 150 live ascarid completely blocking the intestinal lumen. The child was admitted too late and unfortunately died after the operation. Another, a 5-year-old boy, had Ascaris lumbricoides in the appendix (Fig. 2). He was admitted to my department with symptoms of acute abdominal disease, a temperature of 100F. and a pulse rate of 140. Laparotomy revealed some free fluid in the abdominal cavity, bluish discoloration of the intestine and the presence of two live ascaria in the appendix. After appendectomy oil of chenopodium mixture was given, and three days later the child passed another ascaris. Convalescence was otherwise uneventful, and the boy was discharged from the hospital twelve days later.

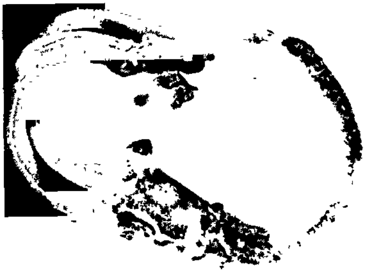


Fig. 2.—Appendicular obstruction by A. lumbricoides (author's case).

Amebiasis. — Although amebiasis may occur in every country, patients in the tropics usually seek medical aid in the late stages of the disease. The surgeon may encounter cases of colitis, with bleeding ulcerations, or abscess of the liver. The first condition may sometimes cause dangerous bleeding, perforation and peritonitis and calls for emergency laparotomy; the second usually requires aspiration of the abscess. Treatment of either is successful only if supported by emetine or chloroquin. Often on opening the abdomen for peritonitis, I have observed one or more perforated ulcers of the colon. Recovery followed repair of the perforations and the administration of emetine. In 1 case of hepatic abscess (the first I ever encountered), I aspirated several times, removing a total of 3 pints of "chocolate" pus. This aspiration, supported by chloroquin, produced quick recovery.

Malnutrition—Malnutrition is exceedingly common in the tropics. It is caused not only by an insufficient and unbalanced diet but by poor function of the liver,

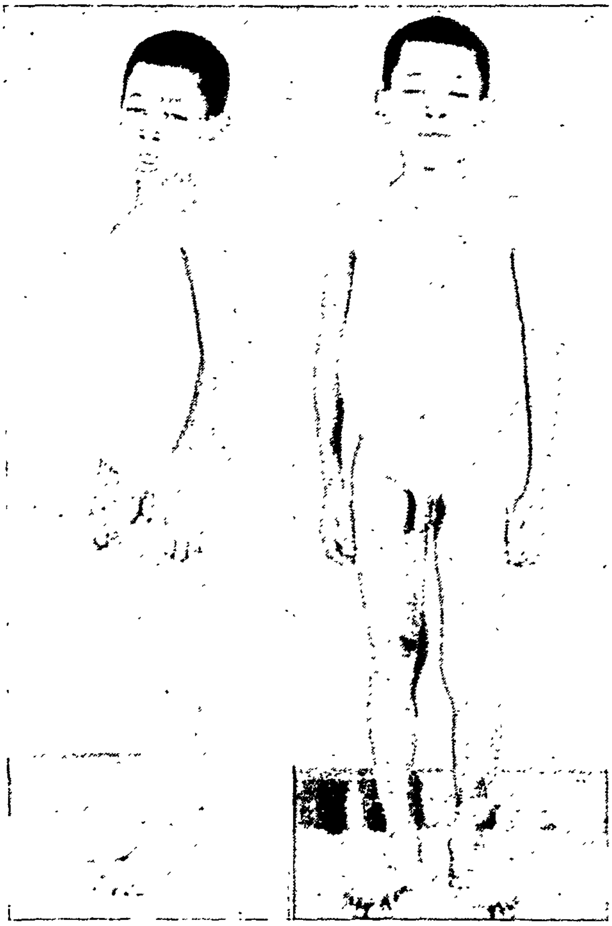


Fig. 3.—Boy with venous occlusive disease. (*Photographs supplied by Prof. K. R. Hill*).

kidneys and bowels; when secondary, it is due to chronic inflammation and parasitic infestation. During my practice in the tropics, I have been struck not so much by the frequency of malnutrition but by resilience of the human frame, so great as to allow the survival of many children in spite of insufficient diet, chronic inflammatory disease and parasitic infestation.

Not only is the tropical diet deficient and unbalanced in protein-carbohydrates-fat-vitamin requirements, but sometimes it even contains some foods which scientifically have been proved poisonous.

Bras, Hill, and others of the University College of the West Indies, working on the Chiari syndrome (endophlebitis of liver vessels) discovered a new disease they call V.O.D. (venous occlusive disease). Their work suggests that malnutrition and drinking "bush tea" are the essential etiologic factors. This disease occurs mostly among children, but its appearance in adults (and even in cows) has been described (Figs. 3 and 4).

It is obvious that all malnourished patients need special care in surgical practice. Proper immediate treatment by transfusion of blood, plasma, protein and vitamins should be employed in all cases in which this one condition is evident or incipient.

Blood transfusion is the generally accepted method of treatment, and every modern surgeon considers it an essential procedure in many surgical cases. In the tropics, however, blood transfusion may create some difficulty, owing to prejudice, religious law or ignorance. Some even believe that, if they donate a pint of blood and the recipient dies, they too will perish.

In my first month in the tropics I operated during the night on a patient with advanced secondary anemia for which a blood transfusion was needed. As no blood bank was available, and it was difficult to find a donor immediately, I gave my own blood, as I am a universal donor. On the following morning, when the patient's condition improved, I explained to his family that the blood transfusion had been administered, but my explanation was accepted with such a lack of enthusiasm that I felt rather hurt. After giving it some thought, I came to the conclusion that their fear of blood transfusion was basically sound. Blood transfusion in the tropics can be dangerous, because it may transmit many tropical and venereal diseases, and great caution in the selecting of donors is necessary. Antimalarial drugs should be given to both donor and recipient in all malarial regions.

Racial Problems.—The population of British Honduras is multiracial, consisting of Maya Indians, Spaniards, Negroes and mixtures of these. Different races or even different tribes living in the same surroundings react differently. Many theories have been tried to explain this fact, but thus far none is sufficiently convincing. Without going into the details of such an interesting subject, I should like only to mention some observations made in British Honduras.

1. The people of one tribe, The Caribs (probably of African origin) have a much longer life span than do the original inhabitants of this country, the Maya Indians. Caribs live up to the age of 80, but Maya Indians seldom reach the age of 50. The Maya Indians have low natural resistance to disease and are poor surgical risks.

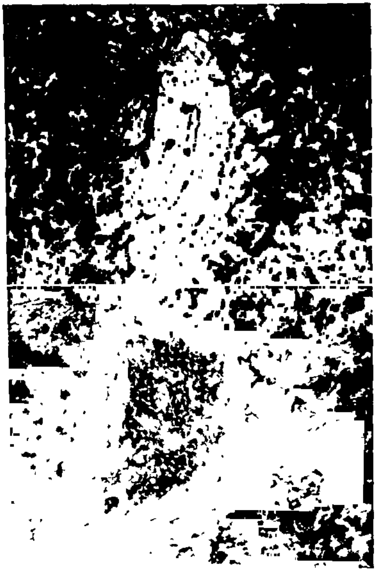


Fig. 4.—*Above,* high power photomicrograph (hematoxylin and eosin stain) of centrilobular vein from hepatic biopsy specimen in case of boy shown in Figure 3, showing beautiful example of vascular occlusion. [illegible] case, stained with [illegible] (*Photomicrographs* [illegible]

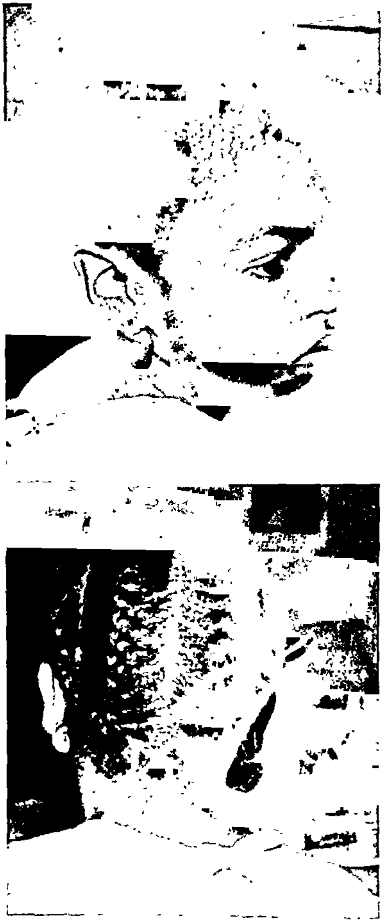


Fig. 5.—Fibroids of *auricle developing after* perforation of lobes for earrings (author's case).

2. The fibroblastic diathesis of the Negro race is another racial peculiarity. There is

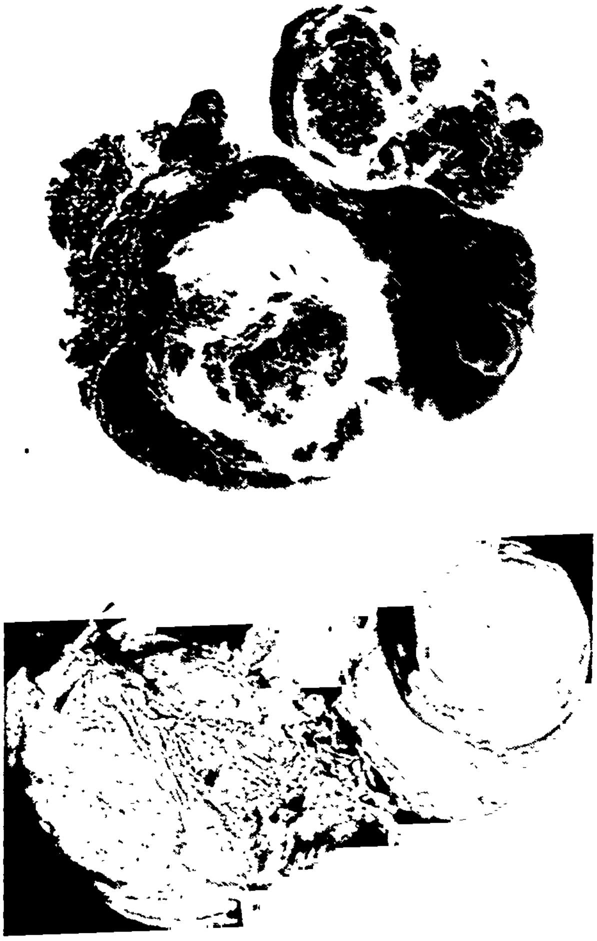


Fig. 6.—Uterine fibroids. *Above*, subserosal; *below*, submucosal. Author's case.

a tendency to keloid formation in postoperative scars and the appearance of fibromas after trauma (Fig. 5).

3. An enormous number of negroid women have uterine fibroids. During my five years in the tropics I have personally performed over 400 hysterectomies for this reason. This benign tumor reaches such a size and is so often complicated by inflammatory changes that it may be firmly stuck to its surroundings and be technically difficult to remove.

This tumor appears among Negro and mixed races so often that it has become a social problem. It appears in women who have children as well as those who have not; in other words, pregnancy does not affect its incidence. Some of the tumors I have removed here have weighed 17 pounds (Fig. 6, *above*). It is obvious that, on account of its size, the tumor compresses the lower abdominal organs, and can cause complication. The submucosal type, however, is more dangerous, because of secondary anemia produced by frequent uterine bleeding (Fig. 6, *below*).

According to standard teaching, myomectomy should be the operation of choice. This, however, is not acceptable here. The size and site of the tumors in our patients exclude it. I have tried several times to remove the tumors only, but in a short time the patient presented herself again with a new lump and another operation was necessary. As a matter of fact, total hysterectomy seems to be necessary. Of course I try to postpone this procedure if possible, until the end of the reproductive period. I have communicated with other surgeons in this area, and they agree that total hysterectomy is the only solution.

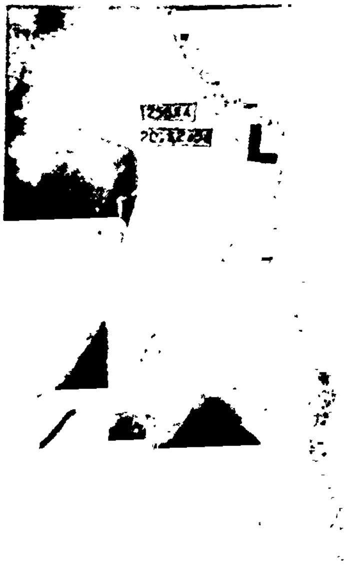


Fig. 7.—Avascular necrosis of head of femur due to sickle cell anemia. Picture resembles that of Legge-Perthe disease.

There are many theories concerning the cause of this disease, which I shall not mention here. I wish to call attention, however, to the marked incidence of this condition in Negresses. It seems almost to be a racial peculiarity. Can it be due to the racial fibroblastic tendency? Does the condition follow trauma or irritation during their well-known early sexual activity?

4. *Another racial disease of the Negro* is sickle cell disease, which can cause many pathologic changes in bone marrow, e.g., osteomyelitis or avascular necrosis of the head of the femur. Examination of the blood for sickle cells is advisable in all operative cases, as fatal postoperative complications due to unrecognized sickle cell disease have occurred (Fig. 7).

Malignant Growth.—The most common malignant growth in British Honduras is carcinoma of the cervix. During the first six months of this year I have observed 26 cases more than I encountered last year. This is a very high figure for a population of 80,000. Many more cases confront other doctors during that time; many more are no doubt lying unnoticed in remote villages.

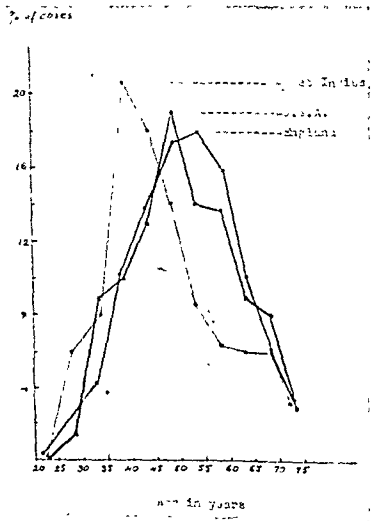


Fig. 8.—Incidence of carcinoma of the cervix in relation to age.

Some of the patients have been comparatively young women. This is in agreement with recent work at U.C.W.I. by Bras, *Stewart, Pinkerton and Miller, which shows that the maximum incidence of carcinoma of the cervix in Jamaica is reached* ten years earlier than in the United States and fifteen years earlier than in England (Fig. 8).

In explanation of this early age incidence I am inclined to the opinion that cervical carcinoma tends to appear earlier in women whose sexual activity and childbearing begin earlier. If one accepts the theory *that sexual activity and childbearing have* a carcinogenic action which "take an average of twenty years to produce its effect" (Maliphant, 1948), one easily finds an explanation of the early age incidence, as it is known that sexual activity and childbearing begin among tropical peoples shortly after puberty.

Treatment of carcinoma of the cervix *in some remote places in the tropics is* difficult because 1) the patient usually comes to the hospital in an advanced stage of the disease (second, third or fourth), 2) and not all hospitals have facilities for irradiation treatment and the patients are too poor to afford travel abroad. In many cases, therefore, operation alone, no matter how extensive, does not secure a successful result.

Early microscopic diagnosis is the essential factor. *In differential diagnosis special* attention should be paid to granuloma inguinale and tuberculosis of the cervix which sometimes show similar clinical pictures.

In connection with this disease, I should like to stress the great number of vaginal

Carcinoma of the Cecum Producing Intussusception

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ALTHOUGH intussusception is common in the infant and small child, its occurrence in the adult is rare. In infants it is usually primary or without apparent disease in the bowel. In adults it is secondary to some disease of the intestines, usually a benign tumor. The diagnosis is rarely made before operation.

Brayton and Norris made an extensive review of the literature and reported that, of 749 intussusceptions occurring in 745 adult patients, intussusception originated in the small intestine in 52 per cent and in the colon in 38 per cent. They also emphasized the importance of differentiating the ileocolic from the ileocecal type. The causative lesion in cases of ileocolic intussusception is located in the small intestine and is less likely to be malignant than is the ileocecal type, in which the lesion lies within the cecum. The case of a patient recently treated for this condition is considered sufficiently interesting to report.

REPORT OF CASE

A white housewife 65 years of age was first seen by one of us (J. J. C.) in February 1956. She complained primarily of episodes of tightness in the throat and chest. These attacks had occurred over about two years. They had become more frequent and were associated with regurgitation of large amounts of mucus and, on occasion, previously eaten food.

She also complained of intermittent crampy pains in the lower part of the abdomen, of four months' duration. These pains had never been severe, but occasionally they did awaken her at night. Intermittently she had noticed a "lump" in the right lower abdominal quadrant, but when she consulted a physician elsewhere it had disappeared.

Examination revealed the patient to be thin and slightly pale. She weighed 100 pounds (45.4 Kg.). The blood pressure in millimeters of mercury was 160 systolic and 100 diastolic. There was a healed thyroidectomy scar. The left breast had been removed for a benign lesion. There was an apical systolic murmur but no evidence of decompensation. The abdomen was slightly distended, but no tumefactions were detected by palpation. It was the clinical impression that most of the symptoms were based on cardiospasm, and sedative and antispasmodic drugs were given. This improved the patient to such an extent that she did not take the roentgen and laboratory tests that were recommended.

Three weeks prior to her admission to the Highland Hospital on April 3, she noticed a recurrence of the mass in the lower part of the abdomen. The mass persisted and was larger than on previous occasions. One week before admission she became nauseated and vomited almost everything taken. At the same time she became constipated and was unable to move the bowels even with the assistance of a cathartic and an enema. At no time did she have rectal bleeding or acute abdominal pain. It was not until the day of her admission to the hospital that she felt ill enough to call her physician.

Examination just prior to admission showed her to be dehydrated and chronically ill. She was afebrile and not in acute distress. The pathologic signs were limited to the abdomen, which was slightly distended and tympanitic. There was no rigidity or tenderness, but there was a large sausage-like mass in the right

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From the Highland Hospital, Rochester.
Submitted for publication Sept. 19, 1956.

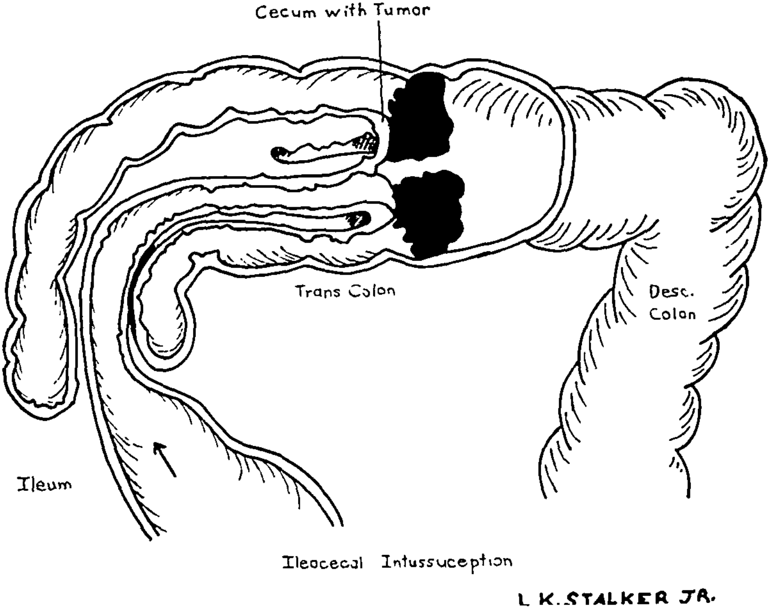

Diagram showing ileocecal intussusception produced by carcinoma of cecum.

lower quadrant. This was freely movable and extended across the lower part of the abdomen. On three consecutive examinations after admission to the hospital the mass seemed to increase in size. No audible or visible peristalsis was present, and the mass was not tender. Rectal and pelvic examinations were noncontributory. The white blood cell count was within normal limits. The value for hemoglobin was 8.7 Gm. per hundred cubic centimeters of blood. The erythrocytes numbered 3,480,000 per cubic millimeter. A complete analysis of the blood for chlorides, urea nitrogen, carbon dioxide, sodium and potassium, as well as a urinalysis, revealed no more than minor changes due to dehydration, which were promptly corrected by intravenous therapy. A roentgenogram of the abdomen taken without barium showed no evidence of gas in either the small or the large intestine. After a saline catharsis and enemas, roentgenographic studies of the colon were done on two occasions. These revealed no evidence of obstruction. The colon could not be filled beyond its left transverse portion. There were no localized signs of obstruction, and the diagnostic coiled spring ensheathment pattern of intussusception was not observed. An intravenous pyelogram revealed no abnormality. A gastrointestinal series with a follow-through of the small bowel was then done. There was a pronounced degree of achalasia of the esophagus, barium being retained in it for five hours. The stomach filled slowly, but no intrinsic lesion was demonstrated. Barium was retained in a large atonic duodenal cap for four to five hours. The terminal portion of the ileum appeared abnormal, with a loss of mucous membrane pattern and slight dilatation in the region of the terminal portion of the ileum. The ce and the right half of the colon could not be visualized. The roentgenologist concluded that there was either an intrinsic lesion in the terminal portion of the ileum or fairly extensive extrinsic pathologic change in this region, producing a bizarre appearance in the terminal portion of the small bowel and lack of visualization of the right half of the colon.

Laparotomy, performed on April 9, revealed a large sausage-shaped mass involving the terminal portion of the ileum, the cecum and the right and transverse portions of the colon. This was an ileocecal type of intussusception, starting just proximal to the ileocecal valve (see illustration). It was chronic, and there was much edema in the involved bowel. The bowel was not obstructed, and, although we had not intended to reduce the intussusception, the manipulation of exploration stimulated its reduction. A large tumefaction was present, involving all of the walls of the cecum but without apparent extension beyond the bowel. An extensive right hemicolectomy with an ileotransverse colostomy was done. When the specimen was opened there was a 7 cm. mass encircling the ileocecal valve and involving most of the cecum. This proved to be a mucin-forming cecal adenocarcinoma. The wall had been invaded, but none of the adjacent glands were involved. A coincidental observation was a benign pedunculated polyp 2 cm. in diameter, located some 8 cm. above the cecal tumor.

The patient had an uneventful convalescence and was discharged from the hospital on the eleventh postoperative day. She has continued to do well, and even the symptoms referable to the achalasia have improved.

COMMENT

The presence of pronounced achalasia of the esophagus delayed the diagnosis of carcinoma of the cecum in this case until the abdominal tumor has produced an intussusception. Many of the patient's complaints, particularly the vomiting, anemia and malnutrition, could be attributed to the achalasia. It was noted with interest that there had been some symptomatic improvement in the achalasia since the operation.

It seems probable that the carcinoma had been present for at least one year and that it had provoked many attacks of intussusception, all of which were followed by spontaneous recovery except the last. The symptoms of intussusception in adults vary widely; some degree of obstruction, however, acute, chronic or recurrent, is usually present. Our patient had relatively little obstruction, as was indicated by the initial flat plate of the abdomen and by the fact that the bowels were moving. The symptoms usually vary with the etiologic factors and the site of intussusception. Melena, or the passage of bloody mucus, is uncommon in cases of adult intussusception, but bleeding may result from the tumor causing the condition.

The procedure of choice for intussusception originating in the adult colon is wide resection of the entire lesion without any attempt at reduction. This conclusion is based on the fact that most tumors arising in the colon are malignant.

SUMMARY

A case of adult ileocecal intussusception due to carcinoma of the cecum and complicated by achalasia of the esophagus is reported. It seemed probable that the carcinoma had been present for at least a year, its detection having been delayed by the fact that many of the symptoms presented were considered due to the achalasia.

RESUMEN

Se reporta un caso de intususcepcion íleo-cecal en un adulto, debida a carcinoma del ciego complicada por acalasia del esófago. Parece probable que el carcinoma había estado presente por lo menos un año y no se había diagnosticado por la acalasia esofágica.

ZUSAMMENFASSUNG

Es wird über einen Fall von ileozökaler Invagination bei einem Erwachsenen als

Folge eines Zökumkarzinoms berichtet. Ein komplizierender Faktor bestand in einem Kardiospasmus. Wahrscheinlich bestand der Krebs bereits seit mindestens einem Jahr, seine Entdeckung wurde aber wohl durch das gleichzeitige Vorliegen des Kardiospasmus verzögert.

RIASSUNTO

Viene riferito un caso di intussuscezione ileo-cecale in adulto, dovuta ad un carcinoma del ceco e complicata da achalasia dell'esofago. Si ritiene probabile che il carcinoma fosse presente da almeno un anno e che la sua scoperta sia stata ritardata dalla presenza della achalasia esofagea.

RÉSUMÉ

L'auteur décrit un cas d'invagination iléocoecale chez l'adulte, provoquée par un carcinome du rectum compliqué d'achalasie de l'oesophage. Il est à présumer que le carcinome detait d'un an au moins; son diagnostic a été retardé du fait de la complication oesophagienne.

REFERENCE

1. Brayton, D., and Norris, W. J.: Intussusception in Adults, Am. J. Surg. 88:32-43 (July) 1954.

The world at the present day stands in need of two kinds of things. On the one hand, organization—political organization for the elimination of wars, economic organization to enable men to work productively, especially in the countries that have been devastated by war, educational organization to generate a sane internationalism. On the other hand it needs certain moral qualities — the qualities which have been advocated by moralists for many ages, but hitherto with little success. The qualities most needed are charity and tolerance, not some form of fanatical faith such as is offered to us by the various rampant isms. I think these two aims, the organizational and the ethical, are closely interwoven; given either the other would soon follow. But, in effect, if the world is to move in the right direction it will have to move simultaneously in both respects. There will have to be a gradual lessening of the evil passions which are the natural aftermath of war, and a gradual increase of the organizations by means of which mankind can bring each other mutual help. There will have to be a realization at once intellectual and moral that we are all one family, and that the happiness of no one branch of this family can be built securely upon the ruin of another. At the present time, moral defects stand in the way of clear thinking, and muddled thinking encourages moral defects. Perhaps, though I scarcely dare to hope it, the hydrogen bomb will terrify mankind into sanity and tolerance. If this should happen we shall have reason to bless its inventors.

—*Russell*

Genitourinary Surgery

Experience with Intestinal Transplants in Urologic Surgery

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I SHALL limit this article to personal experience rather than discuss the entire question of intestinal transplants in urologic surgery. My interest in this particular type of operation has led me to perform it quite frequently, and I consider it more interesting to the reader when a surgeon reviews his personal experience than when a long theoretical dissertation is presented, no matter how complete.

My use of transplants is limited to iliac segments because they are easier to handle than others and the problem of reestablishing intestinal continuity is simpler. For this reason I cannot offer an opinion on cecal or sigmoid transplants.

Persuaded by my friend, Dr. Roger Couvelaire, who popularized the much neglected operation of Scheele, I first employed ileoplasty in order to enlarge the constricted tuberculous bladder. This caused me to consider it as a method for replacement of bladders altered by diverse pathologic processes; then also as a method of replacing a ureter or ureters that had become incapable of function.

My experience is confined to these indications for the operation. I have not attempted to utilize it for extrophy of the bladder, but Drs. Powell and Couvelaire have done so. I have not carried out Briker's operation, because the permanent infirmity caused thereby is not justified. It is utilized mainly after cystectomy for carcinoma, with the object of avoiding the unpleasant sequelae of ureterosigmoid implantation. I prefer to defer judgment on that which is unfamiliar to me. Diverting urine into a segment of ileum, isolated by ureterosigmoid implantation, however, does not seem to be of much advantage to patients with carcinoma. The present-day discredit of ureterosigmoidostomy is as excessive as the high favor it formerly enjoyed.

More recently, Briker's operation has been proposed as a method of treatment for certain neurogenic disturbances of the bladder. In these cases I consider it possible to obtain better results with the iliac transplant, and I shall later discuss this new application.

Up to the time of writing I have employed the iliac transplant in 93 instances —always for restoration and never for diversion. This technic of mine was demonstrated to a number both in San Francisco and Los Angeles in 1954. An account of it has just been published in the *Journal d'Urologie*. I shall mention here, accordingly, only my various uses of ileoplasty and the results obtained.

1. Seventy of the 93 operations were performed for chronic tuberculous cystitis.

Read at the General Assembly, Twenty-First Annual National Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-13, 1956, by Charles Pierre Mathe, M.D

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(This is a condition rarely encountered by American surgeons.) It was in the treatment of vesical sequelae following tuberculosis of the kidney that I gained my experience. Furthermore, what is true for chronic tuberculous cystitis is equally true for chronic nontuberculous cystitis.

My first operations, in 1951, had one aim: enlarging contracted bladders (ileocystoplasty for enlargement) with the hope of reducing the intense pollakiuria of these patients. I was always successful *in reducing frequency of urination, and in* rare instances even returned it to normal. This amelioration, which satisfies the patient, is of variable importance. In fact, the operation is the same in all such cases (the bladder is enlarged by the substitution of an iliac loop which gives it a normal capacity), but, surprisingly enough, the patient remains more or less pollakiuric. This persistence of abnormal frequency that can be controlled by the use of génatropine would seem to de due to variable excessive sensitivity of the trigone and the neck of the bladder.

Ileoplasty for enlargement, however, often has more beneficial effects than just the expected reduction of pollakiuria: disappearance of existing dysuria depends on supplemental resection of the constricted posterior lip of the vesical neck; disappearance of bladder pains; in addition, in certain patients there may be disappearance of incontinence due to excessive pressure of the urine contained in the contracted bladder, which forces the sphincters. After ileoplasty, incontinence disappears because hypertension of the urine disappears and the urine can be diffused within a large and supple iliac loop; the neck of the bladder contracts and regains continence. Sometimes it contracts too much; several of my patients eventually had to submit to transurethral resection of the vesical neck for dysuria.

There is a further beneficial effect: vesicoureteral reflux ceases. Reflux results from gaping of the ureteral orifice caused by hypertension of urine in a bladder that is too small and cannot become sufficiently distended. This results in stagnation of urine in the ureter, pelvis and calyces—their dilatation, ureterohydronephrosis, progressive destruction of renal parenchyma and finally death. The ileoplasty, in eliminating reflux, permits the kidney to return to normal function, provided the changes are not too advanced. Some of my patients in whom the condition was irreversible were operated on too late and did not benefit. In others, however, renal function became normal, as was demonstrated by recheck urograms, and there was also an improvement in general health.

Ileoplasty for enlargement is followed not only by improved vesical function but by favorable results in those vital organs, the kidneys. Favorable influence of this operation on the kidney can be obtained only in cases of reflux in which there is a forced ureter. In rare instances, in which there is stricture of the terminal portion of the ureter (8 of my cases), correction of the ureterohydronephrosis, thereby protecting the kidney, necessitated section of the ureter above the stenosed area and its reimplantation into the iliac loop. My impression of ureteroileocystoplasty is quite favorable; ureteroiliac anastomosis does not seem to have a tendency toward stenosis.

I also used ureteroileocystoplasty in 3 cases to correct cutaneous ureterostomy (R. Couvelaire).

The beneficial effects on the kidney of ileocystoplasty for enlargement of contracted bladders prompted me to apply ileoplasty to the treatment of vesicoureteral reflux, which follows certain nephrectomies unaccompanied by the troublesome symptoms of cystitis. In every instance (9 patients) I obtained regression or even spectacular disappearance of ureterohydronephrosis and its renal complications by the substitution of ileocystoplasty treatment of reflux.

The foregoing are the possibilities offered by ileotransplant in the treatment of chronic tuberculous cystitis.

The results are lasting. My first cases date from 1951. In order to assure stability of the ileovesical anastomosis, I consider it necessary to resect the detrusor, which is always pathologic in these cases, and to suture the iliac loop to the trigone, which is always less sclerotic. One must substitute an iliac detrusor for the vesical detrusor.

These results were obtained at the price of an operative mortality rate of 11.5 per cent, in nearly all instances due to renal insufficiency in patients operated on too late. Details concerning these complications and bad results have been published in the *Journal d'Urologie*.

2. Experience in the treatment of tuberculous cystitis has taught us that ileocystoplasty for substitution of the bladder can also be applied in the treatment of nontuberculous intractable cystitis.

Of my 3 patients, 1 died of embolus; 1 woman has had a good result (eight months): disappearance of pain and incontinence, considerable diminution of pollakiuria and of ureterohydronephrosis and recuperation of excellent general health; the third patient had chronic cystitis following diffuse papillomatosis of the bladder, for which I performed subtotal cystectomy, leaving the neck intact and reimplanting the ureters in the iliac loop. The two-year result was diminution of pollakiuria and return of renal function; nocturnal incontinence had persisted, however, and several recurrences of papilloma on the neck required treatment by electrocoagulation.

3. The possibility of replacing a part of the bladder with an iliac loop and the satisfactory functional condition of the bladder following this operation should lead one to consider replacement of the bladder by an iliac loop after cystectomy for carcinoma.

In all 8 cases in which I attempted this operation the tumor was located in the dome, and in removing the bladder I left the neck intact and anastomosed thereto the iliac loop containing the ureters.

I am not satisfied with this particular use of the transplant. The operative mortality rate has been high: 4 deaths; 3 patients died of recurrence of carcinoma within a few months; only 1 is living and well two years after the operation (excellent recheck urograms), with good vesical function during the day but complete incontinence at night. The high mortality rate of this operation does not justify the extensive procedure involved. Furthermore, so extensive a removal reduces the functional efficacy of the bladder without assuring continence.

Total cystectomy with implantation of the ureters into the sigmoid seems to be superior to this technic as well as to the operation of Briker, which increases infirmity without assuring prolongation of life.

4. Ileocystoplasty for substitution in certain vesical disturbances of neurogenic origin was more successful. This new application, which I have introduced, seems very interesting. Unlike Briker's operation, it does not consist of placing the ureters in the skin which replaces an infirmity with a less painful one; my technic consists of replacing a poorly functioning bladder detrusor with an iliac detrusor for the purpose of restoring normal or almost normal vesical function.

My experience encompasses five distinct types of vesical disturbance of neurogenic origin. The case of my oldest patient, a woman, dates back two years. This woman was operated on for almost complete urinary incontinence following denervation of the bladder caused by radical hysterectomy and lymphadenectomy. Replacement of the vesical detrusor by an iliac detrusor resulted in almost complete cure.

About a year ago I performed the same plastic operation for substitution in a case of paraplegia following meningomyelitis. The intense dysuria and pollakiuria were corrected, incontinence disappeared during the day but persisted at night.

Two other patients had meningocele with extremely painful vesical symptoms. They were operated on only a few months ago. In 1 the result is excellent during the day but incontinence persists at night; in the other, although I did not obtain a good result, there is great amelioration of the symptoms.

In the last of these 5 patients, whose symptoms were of obscure neurogenic origin, an excellent result was obtained, but the case is too recent for evaluation.

It is my conviction, therefore, that vesical disturbances of neurogenic origin, i.e., those not resulting from contracture of the vesical neck but rather due to faulty function and lack of tone of the detrusor, can in certain instances be cured or improved by ileocystoplasty for substitution. This operation should take its place among operations on the nerves of the bladder. It can complement or replace the denervation operation, which I discarded long ago because of unfavorable results.

5. I attempted to replace the bladder in 3 patients who, after hysterectomy and lymphadenectomy, presented (among other mutilations) advanced vesicovaginal fistula. It was impossible to close the fistula in the contracted and sclerosed bladder by suture. In these cases I resected the bladder, leaving intact the neck and as much as possible of the trigone, with or without reimplantation of the ureters in the iliac loop. Up to the time of writing I have not had one valid result. Of these 3 patients, 1 died, the condition of 1 was ameliorated, and the case of the third is too recent for evaluation.

6. I performed ileocystoplasty for the following new but questionable indication: The patient presented congenital dysuria. Both transurethral and retropubic resection of the vesical neck had failed, as was evidenced by persistence of dysuria, incontinence and chronic in complete retention of urine in the bladder; the detrusor muscle was enlarged, thickened and atonic. Subtotal cystectomy for removal of the detrusor might have been sufficient, but I complemented it by ileocystoplasty. It is too soon to evaluate results, as the operation was only recently performed.

7. The last 3 cases I shall mention concern ileoplasty for replacement of one or both ureters.

In the first, an operative death resulted; the patient died because of renal insufficiency following replacement of left megaloureter by anastomosis of the ileum to the pelvis and to the bladder (nephrostomy of the right kidney had been previously carried out and the opposite kidney was nonfunctioning).

In the other 2 patients (women) left ureterovaginal fistula and stenosis of the right pelvic ureter had developed after hysterectomy and lymphadenectomy. In these patients I divided both ureters above the iliac vessels and, not being able to dissect them any lower because of sclerosis of the pelvis, implanted them in the branches of a U-shaped iliac loop anastomosed to the bladder at the concave surface. In the first case it became necessary to perform right nephrectomy, as the thin-walled right ureter had been torn during the ureteroiliac anastomosis. Both patients were operated upon less than a year prior to the time of writing. Careful recent clinical and roentgenographic rechecks have been made and show satisfactory results.

CONCLUSIONS

The author has arrived at the following conclusions with regard to the iliac transplant:

The operation is relatively benign, provided that there is adequate renal function (when inadequate, it can be reestablished by preparation).

There is satisfactory function of iliac bladders on condition that the trigone has been retained intact.

The favorable action of ileocystoplasty on renal function in cases of reflux is favorable as is that of ureteroileocystoplasty in cases of ureteral stenosis.

The humoral syndrome of reabsorption of the electrolytes of the urine is usually absent (only 1 of the author's patients presented hyperchromic acidosis, clinically discernible, and this was controlled by medical treatment).

The future of ureteroiliac implantation is difficult to forecast, but it seems probable that the tendency to stenosis is much less with implantations in the ileum than in the sigmoid.

At present one can rightly say that the iliac transplant has contributed to progress in the field of conservative urologic surgery. It has acquired a place in the therapy and can probably be utilized to help solve many problems still in abeyance.

CONCLUSIONI

Giguardo al trapianto iliaco l'autore è giunto alle seguenti conclusioni:

L'operazione è relativamente ben tollerata, ammesso che vi sia una adeguata funzione renale (qualora, infatti, essa sia inadeguata occorrerà ristabilirla con la preparazione).

Si ha un soddisfacente funzionamento della vescica iliaca a condizione che il trigono sia intatto.

L'azione favorevole della ileocisto plastica sulla funzione renale in caso di reflusso; favorevole come quella della ureteroileoplastica nei casi di stenosi ureterale.

La sindrome umorale da riassorbimento degli elettroliti dell'urina è di solito assente (solamente uno fra i pazienti dell'autore ebbe acidosi ipercromica, clinicamente apprezzabile, e controllata con la terapia medica).

E' difficile prevedere il futuro dell'impianto ureteroiliaco, ma sembra probabile che la tendenza alla stebosi sia minore negli impianti all'ileo che al sigma.

Attualmente si può a ragione affermare che il trapianto ilaco ha largamente contribuito al progresso nel campo della chirurgia urologica conservativa, ha conquistato un posto nella terapia e sarà probabilmente usato in futuro per risolvere problemi finora insoluti.

CONCLUSIONES

El autor ha llegado a las siguientes conclusiones respecto al transplante de íleon:

La operación es relativamente benigna, siempre que haya adecuada función renal (cuando es inadecuada, puede restablecerse previamente).

Hay función satisfactoria de las vejigas de íleon con la condición de que el trígono haya quedado intacto.

La acción favorable de la iliocistoplastía en la función renal en casos de reflujo; es favorable como es la uretero-ilio-cis toplastía en casos de estenosis ureteral.

El síndrome humoral de reabsorción de los electrolitos de la orina está ausente usualmente (solo uno de los pacientes del autor presentó acidosis hipercrómica, discernible clinicamente y ésta fué controlada por tratamiento Médico).

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nicos es difícil de prever, pero parece que la tendencia a la estenosis es mucho menor con implantaciones en el íleon que en el sigmoide.

En el presente puede decirse que el transplante de íleon ha contribuido al progreso en el campo de la cirugía urológica conservadora. Ha adquirido un lugar en la terapéutica y probablemente pueda utilizarse para ayudar a resolver muchos otros problemas aún sin solución.

SCHLUSSFOLGERUNGEN

Bezüglich der Dünndarmtransplantate als Harnblasenersatz gelangt der Verfasser zu folgenden Schlüssen:

Die Operation ist verhältnismässig harmlos, vorausgesetzt dass eine ausreichende Nierenfunktion besteht. (Wenn sie ungenügend ist, lässt sie sich durch entsprechende Vorbereitung wiederherstellen).

Die Funktion der Dünndarmblase ist ausreichend, vorausgesetzt dass das Trigonum intakt geblieben ist.

Der Einfluss der Dünndarmblasenplastik auf die Nierenfunktion in Fällen von Harnrückfluss ist günstig, ähnlich dem Einfluss der Harnleiter-Dünndarm-Blasenplastik in Fällen von Harnleiterverengung.

Gewöhnlich treten keine Symptome als Folge von Rückabsorption der Elektrolyte des Harnes auf. (Nur einer der Kranken des Verfassers zeigte eine klinisch erkennbare hyperchromische Azidose, die durch medizinische Behandlung ausgeglichen wurde).

Es ist schwer, über die Zukunft der Harnleitereinpflanzung in den Dünndarm Voraussagungen zu machen, es besteht jedoch der Anschein, dass die Neigung zu Harnleiterverengungen bei Einpflanzungen in den Dünndarm geringer ist als bei Einpflanzungen in das Sigmoideum.

Im Augenblick lässt sich mit Recht behaupten, dass das Dünndarmtransplantat zu den Fortschritten auf dem Gebiete der konservativen urologischen Chirurgie gehört. Es hat sich einen Platz in der Therapie erobert und lässt sich wahrscheinlich zur Lösung mancher noch in der Schwebe befindlichen Probleme verwenden.

CONCLUSIONS

L'auteur arrive aux conclusions suivantes concernant la greffe iliaque:

L'opération est relativement bénigne, à condition que la fonction rénale soit suffisante (dans le cas contraire, elle peut être ré-établie par une préparation adéquate).

La fonction de la vessie iliaque est satisfaisante, à condition que le trigone ait été maintenu intact.

L'action de l'ilio-cystoplastie sur la fonction rénale dans les cas de reflux est favorable, comme l'est celle de l'urétereo-ilio-cystoplastie dans les cas de ptose rénale.

Le syndrome humoral de réabsorption des électrolytes urinaires fait habituellement défaut (l'auteur a eu un seul malade présentant de l'acidose hyperchrome, cliniquement décelable, symptôme qui a cédé à un traitement médical).

Il est difficile de prévoir l'avenir de l'implantation urétéro-iliaque, mais il semble probable que la tendance à la sténose est bien moindre avec les implantations dans l'iléon que dans le sigmoïde.

L'on peut actuellement dire avec raison que la greffe iliaque a contribué aux progrès réalisés dans le domaine de la chirurgie urologique conservatrice. Elle a conquis sa place dans la thérapeutique et peut probablement être utilisée aux fins d'aider à résoudre plus d'un problème encore en suspens.

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agar by the pour plate technic. The quantitative plates were incubated at 37 C., and results were read after twenty-four and forty-eight hours' incubation. For qualitative bacteriologic study, one 4 mm. loop of all macroscopically turbid specimens was streaked in duplicate directly on trypticase soy blood agar plates (5 per cent defibrinated horse blood) and eosin-methylene blue-agar (E.M.B.) plates (Levine). All clear specimens after removal of the 0.1 ml. portions for quantitative study were centrifuged at 2,500 rpm for ten minutes. The centrifugate was streaked onto the same media as above.

A Furadantin diagnostic tablet (10 mg.), a tetracycline (2.5 mcg.) and a streptomycin (2.5 mcg.) wet filter paper disk[4] were placed on the site of initial streaking on each blood agar plate. One set of blood agar plates and one set of E.M.B. plates were incubated aerobically at 37 C. for twenty-four hours, and the other set of each media was incubated under strict anaerobic conditions.[5]

Quantitative plate counts were made and recorded on a basis of total organisms per milliliter, regardless of species. Generic and species identification was made on a basis of cultural, morphologic and biochemical studies. The media of King and his associates[6] were used for Pseudomonas aeruginosa and fluorescens differentiation. Enterococci were differentiated from hemolytic, nonhemolytic and viridans streptococci by inoculation into trypticase soy broth containing 6.5 per cent sodium chloride and by mannitol fermentation. Proteus was identified by the use of the urease test.[7] Paracolon species were identified on the basis of latent (ten to thirty days) lactose fermentation. Diphtheroids were identified by cultural growth and gram stain morphologic studies.

TABLE 1.—*Organisms and Their Susceptibility in Vitro to Furadantin in Patients with a Single Infection*

Species	*Total No.*	*Susceptible %*	*Resistant, %*
E. coli	25	24 (96)	1 (4)
A. aerogenes	18	9 (50)	9 (50)
Proteus species	11	9 (81.8)	2 (18.2)
Pseudomonas species	4	0 (—)	4 (100)
Ps. aeruginosa	3	0 (—)	3 (100)
Enterococci	4	4 (100)	0 (—)
Paracolbactrum species	1	0 (—)	1 (100)
Total	66	46 (69.7)	20 (30.3)

Susceptibility Testing. — A composite broth culture for Furadantin serial tube dilution susceptibility testing was made by picking three separate colonies of each species from each blood agar plate showing growth. These cultures were also used to reevaluate the initial Furadantin disk test and to determine the susceptibility of the isolates by the wet disk technic to tetracycline, chlortetracycline, oxytetracycline, chloramphenicol, neomycin and polymyxin.

The test tube susceptibility test for Furadantin was that previously described.[8] Serial tube dilution susceptibilities were not studied with the other antibiotics. Interpretation of the disk results was based on data previously published by one of the authors.[4b]

Assay.—The assay of Furadantin in urine after institution of therapy was done primarily by using a bio-assay Oxford cup technic. Good correlation with this method for Furadantin in the urine specimens was obtained with the spectophotometric method of Paul.[9] Quantitation was not of the same order as reported by Paul,[9] however, since the total output of urine for these patients was not determined. The presence or absence of Furadantin by bio-assay was considered significant. It is assumed that urine levels above those to be reported were present during therapy. Since the patients were not hospitalized, however, the Furadantin levels are in

Treatment of Infection of the Urinary Tract with Furadantin®*

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THE treatment of infections of the urinary tract, both acute and chronic, constantly confronts the urologist. A quick and efficient agent to eradicate these infections is desirable. With the advent of sulfonamides and then the antibiotics, favorable chemotherapeutic progress was made. Nevertheless, the incomplete bacterial spectra, the ability of microorganisms to become resistant, drug toxicity, and reported intolerance of these drugs on the part of the patient, presaged a need for new chemotherapeutic agents.

Studies[1] have shown that the addition of a 5-nitro group to furan compounds causes them to become antibacterial. Further experimentation along these lines led to an antimicrobial nitrofuran for systemic use. The properties of this product, Furadantin, have been described.[2]

Favorable reports on the use of Furadantin in the treatment of infections of the urinary tract have appeared in the literature.[3] No attempt will be made to review the available data.

It is the purpose of this paper to present an evaluation of Furadantin in 100 unselected, uncomplicated cases of infection of the urinary tract; to evaluate and compare urine culture and urinalysis as criteria of infection and cure of the disease in the urinary tract, and to evaluate *in vitro* bacterial susceptibility as a guide to therapeutic results.

Plan of Study. — Ambulatory patients, both male and female, were used in this study. The ages ranged from 10 to 70 years. The chief complaints were suggestive of chronic or acute disease of the urinary tract. All urine specimens were collected in sterile containers with aseptic precautions. A urine specimen was collected from each patient prior to medication and subsequently on each office visit. Catheterization was used in the female and external cleansing and collection of the midstream in the male. All specimens were brought immediately to the laboratory. Since some settling in the urine specimen could occur during transport, each specimen on receipt was shaken by inversion several times, and a macroscopic evaluation on the bases of turbidity was made and recorded. The specimen was then equally divided aseptically and a portion submitted for routine urinalysis. The portion in the original container was retained for bacteriologic study.

Bacteriologic Study.—To determine the total number of bacteria per milliliter of urine, 0.1 ml. portions of each specimen were plated in duplicate in trypticase soy

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Brand of Nitrofurantoin, Eaton Laboratories.*

agar by the pour plate technic. The quantitative plates were incubated at 37 C., and results were read after twenty-four and forty-eight hours' incubation. For qualitative bacteriologic study, one 4 mm. loop of all macroscopically turbid specimens was streaked in duplicate directly on trypticase soy blood agar plates (5 per cent defibrinated horse blood) and eosin-methylene blue-agar (E.M.B.) plates (Levine). All clear specimens after removal of the 0.1 ml. portions for quantitative study were centrifuged at 2,500 rpm for ten minutes. The centrifugate was streaked onto the same media as above.

A Furadantin diagnostic tablet (10 mg.), a tetracycline (2.5 mcg.) and a streptomycin (2.5 mcg.) wet filter paper disk[4] were placed on the site of initial streaking on each blood agar plate. One set of blood agar plates and one set of E.M.B. plates were incubated aerobically at 37 C. for twenty-four hours, and the other set of each media was incubated under strict anaerobic conditions.[5]

Quantitative plate counts were made and recorded on a basis of total organisms per milliliter, regardless of species. Generic and species identification was made on a basis of cultural, morphologic and biochemical studies. The media of King and his associates[6] were used for Pseudomonas aeruginosa and fluorescens differentiation. Enterococci were differentiated from hemolytic, nonhemolytic and viridans streptococci by inoculation into trypticase soy broth containing 6.5 per cent sodium chloride and by mannitol fermentation. Proteus was identified by the use of the urease test.[7] Paracolon species were identified on the basis of latent (ten to thirty days) lactose fermentation. Diphtheroids were identified by cultural growth and gram stain morphologic studies.

TABLE 1.—*Organisms and Their Susceptibility in Vitro to Furadantin in Patients with a Single Infection*

Species	*Total No.*	*Susceptible %*	*Resistant, %*
E. coli	25	24 (96)	1 (4)
A. aerogenes	18	9 (50)	9 (50)
Proteus species	11	9 (81.8)	2 (18.2)
Pseudomonas species	4	0 (—)	4 (100)
Ps. aeruginosa	3	0 (—)	3 (100)
Enterococci	4	4 (100)	0 (—)
Paracolbactrum species	1	0 (—)	1 (100)
Total	66	46 (69.7)	20 (30.3)

Susceptibility Testing. — A composite broth culture for Furadantin serial tube dilution susceptibility testing was made by picking three separate colonies of each species from each blood agar plate showing growth. These cultures were also used to reevaluate the initial Furadantin disk test and to determine the susceptibility of the isolates by the wet disk technic to tetracycline, chlortetracycline, oxytetracycline, chloramphenicol, neomycin and polymyxin.

The test tube susceptibility test for Furadantin was that previously described.[8] Serial tube dilution susceptibilities were not studied with the other antibiotics. Interpretation of the disk results was based on data previously published by one of the authors.[4b]

Assay.—The assay of Furadantin in urine after institution of therapy was done primarily by using a bio-assay Oxford cup technic. Good correlation with this method for Furadantin in the urine specimens was obtained with the spectophotometric method of Paul.[9] Quantitation was not of the same order as reported by Paul,[9] however, since the total output of urine for these patients was not determined. The presence or absence of Furadantin by bio-assay was considered significant. It is assumed that urine levels above those to be reported were present during therapy. Since the patients were not hospitalized, however, the Furadantin levels are in

TABLE 2.—*Bacteriologic and Clinical Cure and Urine Assay of Furadantin in Patients Infected with a Single Bacterial Species*

Species	*Total No.*	*Cure* *Bacterial and Clinical, %*	*Bacterial and Clinical Cure, %*	*Assay* *Negative, %*	*Positive, %*
E. coli	25	22 (88.8)	3 (11.2)	9 (36)	16 (63)
A. aerogenes	18	9 (50)	9 (50)	2 (11.2)	16 (88.8)
Proteus species	11	8 (72.2)	3 (27.3)	2 (18.2)	9 (81.8)
Pseudomonas sp.	4	1 (25)	3 (75)	2 (50)	2 (50)
Ps. aeruginosa	3	0 (—)	3 (100)	0 (—)	3 (100)
Enterococci	4	2 (50)	2 (50)	1 (25)	3 (75)
Paracolbactrum sp.	1	0 (—)	1 (100)	0 (—)	1 (100)
Total	66	42 (63.6)	24 (36.4)	16 (24.3)	50 (75.7)

TABLE 3.—*Relation of Negative Bacteriologic and Clinical Cures to Susceptibility of Organisms, Urine Assay, and Reaction to Drug in Patients Infected with One Bacterial Species Responding Unfavorably*

Species	*No. of Cases*	*Total* *Resistant*	*Susceptible*	*Assay* *Neg.*	*Pos.*	*Rx Intolerance*	*Comment*
E. coli	3	1	2	1	2	1	Negative assay—organism susceptible. Positive assay—organism resistant. Positive assay—organism susceptible, but patient intolerant
A. aerogenes	9	9	0	1	8	1	Assay positive on patient with intolerance
Proteus species	3	2	1	1	2	1	Patient with drug intolerance had susceptible organism
Pseudomonas species	3	3	0	1	2	0	Of patients with Pseudomonas infection, had bacterial and clinical cure with resistant organism
Ps. aeruginosa	3	3	0	0	3	0	All organisms resistant
Enterococci*	2	0	2	0	2	1	1 with intolerance of Furadantin
Paracolbactrum species	1	1	0	0	1	0	Resistant organism
Total	24	19	5	4	20	4	

*One of 2 patients with enterococci was refractory to therapy. In the case of the other, neither a clinical nor bacteriologic cure was obtained. Although the enterococci were eliminated, micrococci were still present in the urine.

In 19 instances, organisms not eradicated were resistant to the drug *in vitro*. In 4 cases the patients were refractory to therapy. In 1 instance the original enterococci had disappeared, but a susceptible hemolytic Micrococcus sp. persisted in the urine.

keeping with the time of the patient's call at the office and the relation of that time to the last self-administration of the drug. Urine and blood levels and the rate of excretion of Furadantin have previously been ascertained.[3d]

Other Laboratory Studies.—In relation to patient sensitization and manifestations of allergic toxicity with Furadantin, eosinophil counts were made on a series of patients undergoing therapy.

Dosage.—The dose of Furadantin used was 100 mg. four times daily. A maximum dosage of 200 mg. four times a day was given to 2 patients over a period of ten days.

Evaluation.—Patients were considered cured when they were clinically free of symptoms and when five bacteriologic cultures, taken at weekly intervals after discontinuance of the drug, were negative.

Laboratory and Clinical Studies.—The laboratory and clinical results are reported in terms of the bacteriologic observations, as follows:

1. Patients on whom only 1 significant bacterial species was isolated at any time.
2. Patients in whom 2 significant different bacterial species were isolated, either on the first urine culture or during the course of the study.
3. Patients in whom 3 significant different bacterial species were initially isolated, or during their course of study.
4. Patients in whom 4 significant different bacterial species were initially isolated, or during their course of study.

Table 1 presents the data on 66 patients from whom a single microorganism was isolated. The species and their susceptibility to Furadantin are given in the table.

TABLE 4.—*Patients Infected with Two* Different Bacterial Species*

Species	*No. of Cases*	*Urine Assay*		*Organisms*		*Patient Rx Intolerant*	*Bacterial Cure*		*Clinical Cure*		*Comment*
		+	—	*Res.*	*Sus.*		+	—	+	—	
A. aerogenes Proteus sp.	4	4	0	2	2	0	2	2	3	1	One resistant Proteus in 2 cases, no bacterial cure. Clinical cure in one case with resistant organism
A. aerogenes E. coli	8	6	2	4	4	1	4	4	5	3	1 patient refractory to therapy. 3 patients with resistant organism. One patient with resistant organism had bacterial and clinical cure
A. aerogenes Pseudomonas sp.	1	1	0	1	0	0	0	1	0	1	
E. coli Proteus sp.	2	1	1	0	2	0	1	1	1	1	1 patient treated one week
E. coli Enterococci	3	2	1	0	3	0	1	2	1	2	1, no assay at any time, though organism susceptible. 1, last specimen, Enterococci present, no assay obtained
A. aerogenes Enterococci	1	1	0	0	1	0	1	0	1	0	Patient intolerant to therapy
Pseudomonas sp. Enterococci	1	1	0	1**	0	0	1	0	1	0	
Pseudomonas sp. E. coli	1	1	0	1	0	1	0	1	0	1	
Total	21	17	4	9	12	2	10	11	12	9	

*More than 1 organism isolated some time during treatment, not necessarily simultaneous infection.
**Though a resistant Pseudomonas species was present, therapy was effective.

Escherichia coli, Aerobacter aerogenes and the proteus species accounted for 81.8 per cent of the single infections, E. coli being considered the etiologic agent in 41.2 per cent of the infections attributed to these 3 species.

Pseudomonas aeruginosa infections and the Paracolbactrum sp. infection in this group were identified as due to resistant organisms by *in vitro* susceptibility tests initially determined by the disk method and confirmed in the test tube technic. The resistance of these species to Furadantin is in keeping with the observations of others, which have previously been reported. Strains of A. aerogenes exhibit a greater degree of *in vitro* resistance than does either E. coli or the proteus species.

The relation of clinical cure, bacteriologic cure and the presence of Furadantin in the urine by bio-assay for patients with a single infection is presented in Table 2.

Clinical and bacteriologic cure was obtained in 42 (63.6 per cent) of the 66 patients with a single infection.

Furadantin in a detectable level was detected by bio-assay at some one time in 50 (75.7 per cent) of the patients. This is not to be considered an indication that Furadantin was not being excreted by the remaining 16 (24.3 per cent) of the patients. The bio-assay method will detect 0.9 mg. of Furadantin per hundred milliliters of urine, or 9 mcg. per milliliter. These data are in agreement with spectrophotometric assays as done with the Beckman Model B spectrophotometer. Since all patients in the study were ambulatory office patients, negative assay results could be attributable to variables not encountered in controlled hospitalized patients. Such factors as voiding before coming to the office were admitted or denied. Irregularity in the timing of self-administration of the drug did occur. The latter factor had to be regulated by the activity and pursuits of the patient. It was discovered by questioning that the interval between administration of the drug and collection of urine varied from one-half to eighteen hours. The longest delay would occur in a patient who took the drug the night before and appeared in the office next morning prior to having taken the drug. In view of these variables, the presence of assayable Furadantin in the urine of 75 per cent of the patients is considered by the authors to be excellent.

The excretion of Furadantin does vary among patients. This was determined by retaining 3 patients, with their consent, and obtaining urine specimens at half-hour intervals after 100 mg. of the drug had been taken.

In patient No. 1 Furadantin in an assay concentration equivalent to 1.8 to 3.75 mg. per hundred milliliters was detectable in one-half hour. In two and one-half hours the level rose to 15 to 30 mg. per hundred milliliters of urine. In patient No. 2 a Furadantin level of 1.8 mg. per hundred cubic centimeters was not detectable until three hours after administration. A half hour later this level rose to 3.75 mg. In patient No. 3, no detectable level was obtained at the end of three hours. This observed variation in drug excretion may account for some of the negative assays.

It is of record that an approximate average of 40 per cent of the administered Furadantin can be removed in the urine of the patient within twelve hours after the administration of a 200 mg. dose. It may be assumed from the data of Carroll and his co workers[3d] that the rate of excretion approximates 7 mg. per hour. This is not as high as the figure of Paul and Kopko,[10] who reported an average of 36.3 mg. excreted in two hours. With regard to bacterial susceptibility *in vitro* and its correlation with *in vivo* response, it may be assumed that in patients harboring a pathogen refractory *in vitro* to 15 to 30 mg. of Furadantin per hundred milliliters or

TABLE 5.—*Patients Infected with Three Bacterial Species*

Species	*No. of Cases*	*Urine Assay*		*Organisms*		*Bacterial Cure*		*Clinical Cure*		*Comment*
		+	—	*Res.*	*Sus.*	+	—			
A. aerogenes	1	1	0	0	x	0	1	0	1	Negative cure may be due to resistant Paracolbactrum species
Proteus sp.				0	x					
Paracolbactrum sp.				x	0					
A. aerogenes	2	2	0	1	1	1	1	1	1	1 patient bacteriologically and clinically cured, though resistant E. coli and Pseudomonas were isolated; other patient not cured though only a Pseudomonas was isolated
E. coli				0	2					
Pseudomonas sp.				2	0					
A. aerogenes	1	1	0	x	0	1	0	1	0	Resistant A. aerogenes, but cure was effective
E. coli				0	x					
Paracolbactrum sp.				0	x					
A. aerogenes	1	1	0	0	x	1	0	1	0	Susceptibility of these organisms 15-30 mg./100 ml.
Paracolobactrum sp.				0	x					
Pseudomonas sp.				0	x					
A. aerogenes	1	1	0	0	x	1	0	1	0	
Enterococci				0	x					
Paracolbactrum sp.				0	x					
A. aerogenes	1	1	0	x	0	0	1	0	1	
Paracolobactrum sp.				x	0					
Ps. aeruginosa				x	0					
A. aerogenes	1	1	0	0	x	1	0	1	0	
E. coli				0	x					
Proteus sp.				0	x					
Total	8	8	0			5	3	5	3	

more, a favorable response to therapy would not occur. The results from this study indicate that this assumption is true. It has also been observed in this study, however, that in a few instances a bacteriologic and clinical cure may result even though the organism is considered resistant by the *in vitro* test. This may indicate that when, for any possible reason, the drug of choice cannot be used, therapeutic trial may result in cure despite the *in vitro* resistance. This phenomenon has been observed in antibiotic therapy. It is rare, and in our opinion *in vitro* susceptibility tests are generally a good guide to effective therapy. Clinical and bacteriologic cure was not effected in all instances when organisms were in a high susceptibility range. In a few instances, however, cure with Furadantin occurred in the presence of *in vitro* resistant organisms. It is to be pointed out that absolute *in vitro-in vivo* susceptibility correlation does not occur.

There are other unexplained factors involved in the complex interplay between patient, microorganisms and chemotherapy. It is not the purpose of this study to present the scientific or hypothetic explanations.

Table 3 summarizes the negative therapeutic results in the 24 cases from which a single bacterial species was isolated.

The reasons are obvious why the 24 patients with a single species did not respond favorably to therapy except in 1 instance of E. coli infection. In this single instance the organism was susceptible, but the Furadantin urine assay was negative.

The organism originally isolated from this patient, a girl 10 years old, was E. coli susceptible to 1.8 to 3.75 mg. per hundred milliliters of Furadantin. After therapy for one and one-half weeks the patient was clinically free of symptoms and the urine

TABLE 6.—*Patients Infected with Four Bacterial Species*

Species	*No. of Cases*	*Urine Assay* +	*Urine Assay* —	*Organisms Res.*	*Organisms Sus.*	*Bacterial Cure* +	*Bacterial Cure* —	*Clinical Cure* +	*Clinical Cure* —	*Comment*
E. coli A. aerogenes Proteus sp. Pseudomonas sp.	1	1	0	x x 0 x	0 0 x 0	0	1	0	1	Therapy for 12 weeks
A. aerogenes E. coli Pseudomonas sp. Paracolbactrum sp.	1	1	0	0 0 x x	x x 0 0	1	0	1	0	Therapy for 42 weeks; cure in spite of resistant organism
A. aerogenes E. coli Ps. aeruginosa Enterococci	1	1	0	x x x 0	0 0 0 x	0	1	0	1	Therapy for 5 weeks
E. coli Enterococci Ps. aeruginosa Proteus sp.	1	1	0	0 0 x 0	x x 0 x	0	1	0	1	Therapy for 1 week
E. coli A. aerogenes Proteus sp. Enterococci	1	1	0	0 0 0 0	x x x x	1	0	1	0	Therapy for 7 weeks; proteus in upper limit of susceptibility range
Total	5	5	0			2	3	2	3	

was sterile as tested by the methods previously described. The patient was followed at weekly intervals with urine cultures for the next seven weeks. Studies were negative until the fifth week after cessation of therapy, when E. coli was again detected in the urine. This organism, like the initial E. coli, was susceptible to Furadantin. It is therefore concluded that, although this patient was clinically and bacteriologically cured for a time, a final cure had not been obtained. Bacterial resistance to Furadantin obviously did not occur, since the species was the same as the one in the original infection and was susceptible *in vitro*. It may be assumed, however, that clinical and bacteriologic cure had occurred, but that autoreinfection had taken place in the five-week period. This patient, therefore, did not fulfill the requirements for cure as previously prescribed.

Table 4 presents data on patients from whom either two [illegible] nt bacterial species were initially [illegible] d, or from whom another different [illegible] species was isolated coincidentally with therapy. The infections in these cases have been called, therefore, "double infections."

If the two organisms were susceptible to Furadantin and if the patient showed no intolerance to the drug, clinical and bacteriologic cure was effected.

In this series it is to be pointed out that with 2 patients clinical cure was effected although one of the two organisms was resistant to the drug: a proteus species in one case and A. aerogenes in the other. It is also of interest that in 1 patient from whom a proteus species and A. aerogenes were isolated a clinical cure was achieved despite the continued presence of a proteus species in the urine. This was a male patient who, except for a period of two weeks, was given continuous therapy for twenty-eight weeks. The proteus species originally isolated was susceptible to 7.5 mg. per hundred milliliters of Furadantin. The proteus isolated at the end of the twenty-eighth week had a tolerance of 15 to 30 mg. per hundred milliliters of Furadantin. It is assumed that this is the same as the initial strain. This increase in drug tolerance is definitely of a low order in relation to the prolonged period of therapy.

In the other instance of clinical cure with two different bacterial species, 1 of which was resistant *in vitro* to Furadantin, the two species were an *in vitro* susceptible E. coli and an *in vitro* resistant A. aerogenes. This patient was given continued therapy for six weeks. The E. coli was eliminated, but the A. aerogenes persisted. The resistance of the species oscillated between 15 and 30 mg. per hundred milliliters. Because of the Furadantin resistance of this microorganism *in vitro*, the patient was given sulfisoxazole for four weeks. During this time the *in vitro* Furadantin-resistant A. aerogenes disappeared from the urine, but an *in vitro* Furadantin-susceptible E. coil reappeared. The patient was again given Furadantin therapy for two weeks, at the end of which time the urine was free of E. coli, but small numbers (less than 100 microorganisms per milliliter) of micrococci appeared in the urine. On the final bacteriologic evaluation of the urine, the *in vitro* Furadantin-susceptible E. coli again reappeared in the urine. At that time the patient was clinically free of symptoms. This case is included in the series because of the reappearance of organisms and the initial and ultimate effect of Furadantin, which can be assumed to be partially responsible for cure. One cannot deny the possibility that, if sulfisoxazole alone had been used in this single case, effective therapy could have resulted.

It is interesting to note that, in this series, bacteriologic and clinical cure was effected with 1 patient from whom enterococci, susceptible *in vitro* to Furadantin, and an *in vitro* resistant Pseudomonas species, other than aeruginosa, were isolated.

Of 21 patients with infections with two different bacterial species, clinical cure was effected in 57.1 per cent of the cases and bacteriologic cure in 47.6 per cent. In 1 instance there was a clinical cure but no bacteriologic cure.

Table 5 presents the data on 8 patients. Three different bacterial species were isolated from each. Of the 8 patients, clinical and bacteriologic cure was effected in 5 (62.5 per cent). Statistically these data are possibly not too significant, because of the limited number of cases. The effectiveness of Furadantin, however, is exemplified. In this series 1 patient with *in vitro* resistant E. coli and Pseudomonas species responded favorably to therapy. Also, cure was effected in 1 patient in whom 2 of the species, an E. coli and a Paracolbactrum sp. were susceptible *in vitro*, and one, an A. aerogenes, was resistant *in vitro* to Furadantin.

Table 6 presents the data on 5 patients, from whom 4 different bacterial species were isolated. In 2 of the 5, clinical and bacteriologic cure was effected. In 1 in-

TABLE 7.—*Summary of Data on 100 Patients Treated with Furadantin*

Type of Infection	*No. of Cases*	*Cure*		*Urine Assay*		*% Cure*		*Refractory to Therapy*	*Organisms Resistant in Vitro, No. of Cases*
		Bacterial	*Clinical*	*Positive*	*Negative*	*Bacterial*	*Clinical*		
1 species	66	42	42	50	16	63.6	63.6	4	19
2 species	21	10	12	17	4	47.9	57.1	2	9
3 species	8	5	5	8	0	62.5	62.5	0	6
4 species	5	2	2	5	0	40.0	40.0	0	4
Total	100	59	61	80	20	59.0	61.0	6	38

TABLE 8.—*Comparison of the Gross Macroscopic Appearance of Urine and the Bacteriologic Cultural Data*

Total no. of specimens	511
Clear specimens	98 (19.2%)
Clear specimens negative by culture	66 (67.3%)
Clear specimens positive by culture	32 (32.7%)
Cloudy specimens	413 (80.9%)
Cloudy specimens negative by culture	117 (22.9%)
Cloudy specimens positive by culture	296 (57.9%)

TABLE 9.—*Bacteriologic-Cultural Data on Macroscopically Clear Urine*

Total no. clear specimens	98
Negative for bacteria	66 (67.3%)
Positive for bacteria	32 (32.7%)
Less than 100 bacteria per Ml.	8 (25.0%)
100 to 1,000 bacteria per Ml.	10 (31.2%)
1,000 to 10,000 bacteria per Ml.	2 (6.2%)
10,000 to 50,000 bacteria per Ml.	2 (6.2%)
More than 100,000 bacteria per Ml.	10 (31.2%)

stance in which cure was effected, 1 of the 4 species was Furadantin-resistant *in vitro*. Therapy with this patient, however, was continued for forty-two weeks. In another instance, in which cure was not forthcoming, the resistant species was P. aeruginosa. In the other 2 patients who were not cured, 3 of the 4 organisms were resistant *in vitro* to Furadantin. The duration of therapy for 1 patient was twelve weeks and for the other five weeks.

Table 7 summarizes the 100 cases. The analysis shows that treatment of these infections of the urinary tract with Furadantin was effective in 61 per cent of the cases. The organisms are considered the species most commonly observed in cases of infection of the urinary tract.

Of the total of 100 patients, 6 were intolerant to the drug. In each instance the idiosyncrasy was of the mild nausea type. No serious toxic symptoms developed in any of the patients, even with prolonged therapy; in 1 case, as has been mentioned, Furadantin was administered for forty-two weeks.

Organisms resistant *in vitro* were associated with 38 of the cases. As has been pointed out, however, effective therapy followed the use of the drug in a limited number of cases even though microorganisms resistant *in vitro* were isolated.

Urine assays for active Furadantin gave positive results in 80 per cent of the cases, even though those tested were all ambulatory office patients. To follow these patients closely presents greater difficulties than to follow controlled hospital patients. There is no reason to assume that, if urine specimens for assay could have been acquired in closer relation to ingestion of the drug, positive assays would have been made in every instance.

As was to be expected, a higher percentage of cure was obtained in patients infected with a single organism than when more than 1 species was present. It is also interesting that the percentile difference of cures in patients from whom 3 different bacterial species were isolated is only slightly lower than in patients with a single organism. The cases in which cure was most difficult were those in which more than 1 organism was isolated, or in which the patient had a recurrent infection with as many as 4 different bacterial species.

Bacteriologic cure could not be confirmed in 2 cases, because the final culture studies were positive. These 2 patients were symptom free and were considered clinically cured.

In 38 cases bacteria resistant *in vitro* to Furadantin were isolated. One-half of these strains occurred in patients who had an initial infection with more than 1 bacterial species or who had acquired a recurrent infection with a species resistant *in vitro* to Furadantin. Since the *in vitro* resistant organisms in the patients from whom more than 1 species were isolated were either present on the initial culture prior to therapy or occurred as a single species after therapy had eradicated the initial susceptible species, we consider that there is no relation between the therapy and the appearance of resistant organisms. The development of resistance *in vivo* by any of the species originally isolated and sensitive to Furadantin was of minimal order and limited in 2 cases.

In patients with a single infection the cure rate, 63.6 per cent, is in keeping with data previously reported.

The Relation of Routine Urinalysis to the Culture of Urine.—Routine urinalysis has long been accepted by urologists as a guide to infection or therapeutic cure. In this study of 100 unselected patients with uncomplicated infection of the urinary tract, 1,102 urine specimens were analyzed by routine urinalysis and also by bacteriologic culture. The correlation between the routine urinalysis and the bacteriologic cultural findings on 511 specimens is presented in Table 8.

Table 8 presents data comparing the gross macroscopic appearance of the urine as routinely observed and the positive bacterial cultures.

TABLE 10.—*Comparison of the Presence of Leukocytes per High Power Field and the Bacteriologic-Cultural Data*

Total no. of specimens	511
Positive for leukocytes	460 (90.1%)
Negative for leukocytes	51 (9.9%)
Positive for bacteria by culture	328 (64.2%)
Negative for bacteria by culture	183 (35.8%)

TABLE 11.—*Relation of Presence of Leukocytes to Bacteriologic-Cultural Observations*

Total no. positive for leukocytes	460
Positive for leukocytes and bacteria	305 (66.3%)
Negative for bacteria, positive for leukocytes	155 (33.7%)
Total no. negative for leukocytes	51
Negative for leukocytes, positive for bacteria	22 (43.1%)
Negative for leukocytes and bacteria	29 (56.9%)

Ninety-eight (19.12 per cent) of the 511 specimens were macroscopically clear. Sixty-six (67.3 per cent) of the 98 clear specimens were negative on culture. Thirty-two (32.1 per cent) of the 98 specimens were positive on culture. The number of bacteria per milliliter of urine in the positive specimens ranged from less than 100 to more than 100,000.

Four hundred and thirteen (80.9 per cent) of the 511 specimens were macroscopically cloudy. One hundred and seventeen (22.9 per cent) of the cloudy specimens were negative for bacteria. Two hundred and ninety-six (57.9 per cent) of the cloudy specimens were positive for bacteria.

From the foregoing data it is indicated that the cloudy specimen is a good index that microorganisms are present in the urine. The clear urine so often considered

TABLE 12.—*Relation of the Incidence of Leukocytes per High Power Field and the Bacteriologic-Cultural Data*

Leukocytes 0-10		*Leukocytes 10 plus*		*Less than 10 Leukocytes with Clumps*		*More than 10 Leukocytes with Clumps*		*Total No. of Specimens*
Bact. +	*Bact.* —	*Bact.* +	*Bact.* —	*Bact.* +	*Bact.* —	*Bact.* +	*Bact.* —	
152	177	95	5	7	2	72	1	511

free of bacteria, however, is frequently not so, and may be overwhelmingly positive for bacteria one-third of the time.

Table 9 presents a quantitative analysis of the incidence of bacteria in the macroscopically clear urine specimens that were bacteriologically positive.

As can be seen from the table, 8 (25 per cent) of the positive specimens had less than 100 bacteria per milliliter. Ten (31.2 per cent) had between 100 and 1,000; two (6.2 per cent) between 1,000 and 10,000; two (6.2 per cent) between 10,000 and 50,000, and 10 (31.2 per cent) more than 100,000.

An analysis of the data comparing gross macroscopic appearance of urine and bacteriologic cultural observations strongly indicates that favorable conclusions based on macroscopic appearance alone, either at the time of collection of the specimen or as reported after a routine urinalysis without culture, when the urine is clear, can be misleading. It is strongly suggested that the only valid criterion of the presence of bacteria with regard to infection or cure is the bacteriologic culture.[11]

Another item reported on routine urinalysis, and accorded much credence, is the presence or absence of leukocytes per high power field.

Table 10 presents a gross breakdown of the 511 urine specimens with regard to the presence or absence of leukocytes and bacteria. Four hundred and sixty (90.1 per cent) of the 511 specimens were positive for leukocytes and 328 (64.2 per cent) for bacteria. Fifty-one (9.9 per cent) of the 511 specimens were negative for leukocytes and one hundred eighty-three (35.8 per cent) for bacteria.

Table 11 presents a study of the relation of the leukocyte-positive urine specimens to the presence of bacteria.

Three hundred and five (66.3 per cent) of the 460 leukocyte-positive specimens were positive for bacteria; however, 155 (33.7 per cent) of the leukocyte-positive specimens were negative for bacteria. A further analysis shows that 51 of the total of 511 specimens were negative for leukocytes and made up a little more than half of the 98 clear specimens (Table 8). Bacteriologic examination of the 51 specimens reported on routine urinalysis to be negative for leukocytes showed 22 (43.1 per cent) of them to be positive for bacteria. We consider these observations significant; they further support our opinion that all specimens of urine submitted for urinalysis in support of positive clinical signs, or to confirm clinical cure, must be cultured.

Table 12 presents the relation between the routine urinalysis, number of leukocytes per high power field and bacterial culture.

Three hundred and twenty-nine (64.4 per cent) of the 511 specimens were reported to contain from 0 to 10 leukocytes. One hundred and fifty-two (46.1 per cent) were positive for bacteria by culture. When by routine urinalysis the incidence of leukocytes per high power field is reported to be greater than 10, and especially when "clumps" are reported, the bacterial relation is of a direct order, as can be seen in the table. It is most significant, however, that if a criterion of less than 10 leukocytes per high power field is considered to indicate that the urine is free of bacteria, false conclusions would be drawn approximately 50 per cent of the time.

In summary, we wish to point out that in our opinion, as a result of this study, a favorable bacteriologic interpretation of routine urinalysis reports when the frequency of leukocytes is less than 10 per high power field can be misleading.

The macroscopic appearance of a specimen of urine, especially if clear, should not be considered indicative of "normal" urine in the presence of positive clinical pathologic signs, or as an index of cure after

therapy. Bacteriologic culture of all urine specimens to confirm the clinical picture in cases of infection of the urinary tract, or to follow the effectiveness of therapy, is strongly recommended.

COMMENT

Treatment with Furadantin in 100 unselected cases of uncomplicated infection of the urinary tract infection has been reported. Bacteriologic and/or clinical cure in 61 per cent of cases confirms the effectiveness, as reported by other clinicians, of this chemotherapeutic agent in treating such infections when they are associated with the microorganisms identified in this study.

Infections of the urinary tract caused by proteus species are generally considered most difficult to treat effectively. A favorable response to Furadantin, however, was effected in certain instances when there were apparent complications with other gram-negative or gram-positive bacterial species. Furadantin was effective not only in infections with a single bacterial species but in infections involving several species, as well as in patients who underwent repeated, recurrent infections caused by different bacterial species.

Side reactions consisted of nausea in 6 patients. This is not considered a serious drawback to the administration of Furadantin. Prompt withdrawal of the drug was quickly followed by disappearance of the nausea.

The generally used dose of 100 mg. of Furadantin every four hours may be continued, with tolerant patients, for an extended period without any untoward manifestations.

It is pointed out from this study that the routine disk susceptibility test should be done coincidentally with the bacteriologic studies. There is an excellent correlation between the *in vitro* susceptibility and the therapeutic results. Using the presently available 100 mcg. Furadantin disks, a wide zone of clearing (20 mm. or more overall) indicates a highly susceptible microorganism. If the zone of clearing is between 12 and 15 mm. the organism is sensitive, and if the zone of clearing is less than 12 mm. the organism is moderately resistant. The degree of resistance as interpreted does not in itself mean any alteration from the regular 100 mg. schedule. Lack of response of an infection due to an organism susceptible *in vitro* indicates need for increase of the dose to 200 mg. every four hours for a period of ten days, if the patient is tolerant.

It has been demonstrated in this study that a concentration of active Furadantin in the urine as high as 30 mg. per hundred milliliters can be obtained. The susceptibility of most microorganisms isolated in this study was well within this range. It is considered that bacterial species refractory to concentrations above 30 mg. per hundred milliliters will not respond favorably to therapy, but, as has been shown, this does not always hold true.

The use of bacteriologic culture of all urine in the diagnosis and in the follow-up of therapy cannot be too strongly stressed. Diagnosing or evaluating infections of the urinary tract on the sole basis of the macroscopic appearance of the urine can be grossly misleading. Credence based on the report of routine urinalysis and interpretation based on the presence or absence of leukocytes per high power field can be in direct opposition to the true bacterial picture.

SUMMARY

1. Furadantin (N-(5-(nitro-2-furfurylidene)-1-aminohydantoin) was effectively used in the treatment of 61 of 100 patients with uncomplicated clinical infections of the urinary tract.

Bacteriologic studies of the urine of each patient isolated one to four of the

free of bacteria, however, is frequently not so, and may be overwhelmingly positive for bacteria one-third of the time.

Table 9 presents a quantitative analysis of the incidence of bacteria in the macroscopically clear urine specimens that were bacteriologically positive.

As can be seen from the table, 8 (25 per cent) of the positive specimens had less than 100 bacteria per milliliter. Ten (31.2 per cent) had between 100 and 1,000; two (6.2 per cent) between 1,000 and 10,000; two (6.2 per cent) between 10,000 and 50,000, and 10 (31.2 per cent) more than 100,000.

An analysis of the data comparing gross macroscopic appearance of urine and bacteriologic cultural observations strongly indicates that favorable conclusions based on macroscopic appearance alone, either at the time of collection of the specimen or as reported after a routine urinalysis without culture, when the urine is clear, can be misleading. It is strongly suggested that the only valid criterion of the presence of bacteria with regard to infection or cure is the bacteriologic culture.[11]

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The use of bacteriologic culture of all urine in the diagnosis and in the follow-up of therapy cannot be too strongly stressed. Diagnosing or evaluating infections of the urinary tract on the sole basis of the macroscopic appearance of the urine can be grossly misleading. Credence based on the report of routine urinalysis and interpretation based on the presence or absence of leukocytes per high power field can be in direct opposition to the true bacterial picture.

SUMMARY

1. Furadantin (N-(5-(nitro-2-furfurylidene)-1-aminohydantoin) was effectively used in the treatment of 61 of 100 patient
with uncomplicated clinical
the urinary tract.

Bacteriologic studies of the
each patient isolated one to

following bacterial species: E. coli, A. aerogenes, proteus species, Enterococcus species, and Pseudomonas species other than aeruginosa (pyocyaneus).

2. Excellent correlation between *in vitro* disk susceptibility tests and clinical results with therapy was observed, with only a few exceptions.

3. Reliance on routine macroscopic observation of urine or on the incidence of leukocytes per high power field as an index of infection can be grossly misleading.

4. Though there were 6 instances in which intolerance of Furadantin was observed, the reactions were all mild and gastrointestinal. The common complaint was nausea, which quickly subsided when the drug was discontinued.

5. No sensitization to Furadantin was encountered in any patient in this study.

ZUSAMMENFASSUNG

1. Furadantin (N-(5-(nitro-2-furfurylidene)-i-aminohydantoin) wurde mit Erfolg an 61 unter 100 Kranken zur Behandlung unkomplizierter klinischer Infektionen des Harnapparates verwendet.

Durch bakteriologische Harnuntersuchungen konnten bei allen Patienten ein bis vier der folgenden Bakterienarten isoliert werden: E. coli, A. aerogenes, die Proteusgruppe, die Darmkokken und Pseudomonas mit Ausnahme des Ps. aeruginosa (B. pyocyaneus).

2. Mit wenigen Ausnahmen konnte eine ausgezeichnete Übereinstimmung der Empfindlichkeitsprüfungen in vitro mit den klinischen Behandlungsergebnissen beobachtet werden.

3. Die makroskopische Beobachtung des Harns und die Anzahl der weissen Blutkörperchen bei starker Vergrösserung unter dem Mikroskop ist sehr unzuverlässig als Gradmesser der Infektion und kann zu groben Irrtümern führen.

4. In sechs Fällen wurde eine Unverträglichkeit des Furadantins beobachtet, die Reaktionen waren aber alle schwach und auf den Magendarmkanal beschränkt. Die übliche Klage war über Übelkeit, die nach Absetzen des Mittels schnell verschwand.

5. Eine Sensibilisierung gegenüber dem Furadantin wurde bei keinem Kranken der vorliegenden Serie beobachtet.

RIASSUNTO

1. Su 100 pazienti con infezioni non complicate del tratto urinario, 61 furono trattati con furadantin (N-(nitro-2-furfurylidene)-i-amino hydantoin). I risultati degli studi batteriologici effettuati nelle urine di ciascun paziente diedero le seguenti specie batteriche nella proporzione di uno a 4: E. coli, A. aerogenes, proteo, enterococco Pseudomona e aeruginosi (piocianei).

2. Si osservarono, tranne poche eccezioni, eccellenti correlazioni fra le prove di sensibilità in vitro e i risultati clinici della terapia.

3. Gli esami macroscopici dell'urina o la presenza in essa di leucociti non può dare sufficienti informazioni sull'infezione urinaria.

4. Solo in 6 casi si osservò un'intolleranza al furadantin con reazioni, peraltro, molti miti e limitate al tratto gastrointestinale. Sintomo comune la nausea che scomparve non appena si sospese il medicamento.

5. In nessun paziente si verificò una sensibilizzazione al furadantin, in questo studio.

RESUMEN

1. Furadantin (N-5 [nitro-2-furfurilidene] i-aminohidantoina) se usó efectivamente en el tratamiento de 61 de 100 pacientes con infecciones clínicas no complicadas del tracto urinario.

Con el estudio bacteriológico, se aislaron de la orina de cada paciente, de una a cuatro de las sigmentes bacterias: E coli, A. aerogenes, las especies de proteus, especies de enterococos y Pseudomonas diferentes de aeruginosa (Piociánico).

2. Se observó excelente correlación entre los resultados de los tests de susceptibilidad in vitro y los resultados clínicos, con la terapéutica; con pocas excepciones.

3. La confianza en la observación macroscópica rutinaria de la orina ó en la incidencia de leucocitos por campo de gran aumento como índice de infección pueden desorientar grandemente.

4. No obstante que hubo 6 casos en los cuales se observó intolerancia al Furadantin, las reacciones fueron siempre ligeros disturbios gastrointestinales. La queja más común fué náusea, que desaparecía rapidamente cuando se suspendía la administración de la droga.

5. No se encontraron reacciones alérgicas al Furadantin en ningún paciente en este estudio.

RÉSUMÉ

1. La Furadantine (N-(5 (nitro-2-furfurylidène)-i-aminohydantoine) a donné des résultats efficaces dans le traitement de 61% de cas d'infections cliniques simples su système urinaire.

Les examens bactériologiques ont été pratiqués en isolant de l'urine de chaque malade, 1 à 4 des éléments bactériens suivants: E. coli, A. aérogènes, protéobacilles, entérocoques, et pseudomonadacés autres que les aérogènes (pyocyaneus).

2. A peu d'exceptions près une excellente corrélation a été observée entre les tests in vitro et les résultats clinques avec traitement.

3. De grandes erreurs peuvent être commises si l'on se fie aux examens macroscopiques habituels de l'urine ou à l'incidence des leucocytes en tant qu'indication d'une infection.

4. Malgré 6 cas d'intolérance à la Furadantine, les réactions ont été bénignes et ont consisté en troubles gastro-intestinaux (les nausées, symptôme habituel, ont disparu dès l'interruption du traitement.

5. Aucune sensibilisation à la Furadantine n'a été constatée.

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Willing though corporate service may be, the deepest instinct in us is individual, and must be so. We are born one by one, and one by one we die. In the rare moments of thought and solitude that we permit ourselves we know this to be true. Some accept it as a jewel beyond price; others fly from it to the pursuits of the mob, overwhelmed by the splendour of such solitude. It is one of the great facts of nature to which industrial society and "totalitarian" war do violence; great as the counterbalancing fact that the privacy of the individual life rots and rusts if turned too much inward, but blooms and fruits if dedicated to the service of others. And this service is not necessarily a conscious fussy matter: it is achieved by the finest characters simply in the easy natural process of being truly themselves. They tell us now that the hips of a rose are full of nourishment; but a rose does not make the providing of nourishment its business. The hip is the outcome of a continuous unconscious miracle of form and smell and colour, an unfolding from root to flower, from birth to death. I have known men like that: they said and did nothing to help me, but only to know them *in being* was a blessing. And indeed nothing can flow from us into another life save what is in ourselves, and how full we must be before we can *overflow!* These are the lives towards whose shaping creation, if it has any meaning at all, is directed: these flowers that bloom and exhale fragrance, these lights that shine, this salt that savours; not the nuts and bolts that hold together the rigid girders of regimented living.

—*Spring*

Surgical Correction of Postvasectomy Sterility

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IT is the purpose of this report to demonstrate that postvasectomy sterility can be corrected by surgical anastomosis of the vas deferens in a sufficiently high percentage of cases as to justify more frequent performance of this operation. O'Conor in 1948 stated that, of 750 urologists answering his questionnaire, 615 had never attempted surgical reunion of the vas deferens. Anastomosis of the vas deferens, or vasorrhaphy, is a reconstructive rather than a destructive surgical procedure, and as such proves most gratifying to the surgeon. This surgical procedure will often restore the unity and emotional stability of a marriage, and its natural by-product is the reproduction of the human race. Few operations have so much to offer both patient and surgeon.

Vasectomy for purposes of sterilization, although a relatively safe procedure when performed by a competent surgeon, is subject to both immediate and delayed physical, mental and social complications. Urologists should counsel their medical colleagues as to the serious social problems that may be created by the injudicious performance of vasectomy for sterilization, and emphasize further the need for extremely careful evaluation of the patient requesting vasectomy.

Wesson in 1950, in a masterly presentation, thoroughly discussed the legal status of vasectomy as a surgical procedure. His paper should be mandatory reading for all medical students and is recommended to all physicians who contemplate performing vasectomy, or who lightly advise their patients to undergo a sterilizing operation.

This report is based on a series of 20 cases of previously vasectomized male patients in whose cases surgical anastomosis of the vas deferens was considered feasible. The first operation was performed by myself in December 1946 and the most recent in August 1956. The average age of those requesting reunion of the vas deferens was 30.6 years; the oldest was 44 and the youngest 27. The average age at the time of vasectomy was 26.9 years, the oldest being 37. The youngest was 16 years old and single.

The average number of children in this group at the time of vasectomy was 1.3. The largest family consisted of 3 children, while in 5 instances there were none. The average number of years intervening between vasectomy and surgical reunion of the vas was eight and seven-tenths. The longest interval with a successful result was nineteen years. The shortest interval before correction of sterility was requested was two years.

A previous failure to restore continuity of the vas deferens does not preclude success on a second or even a third attempt to anastomose the vas deferens. In this series 6 patients were subjected to multiple procedures. In 4 a successful result was achieved on the second attempt to anastomose the vas deferens, and the fifth case is too recent to evaluate. In the sixth case three attempts were required to accomplish a successful result.

In this series of 20 cases there were 2 failures and 18 successful results. Success is predicated on the presence of active, viable sperm in the ejaculate, observed by

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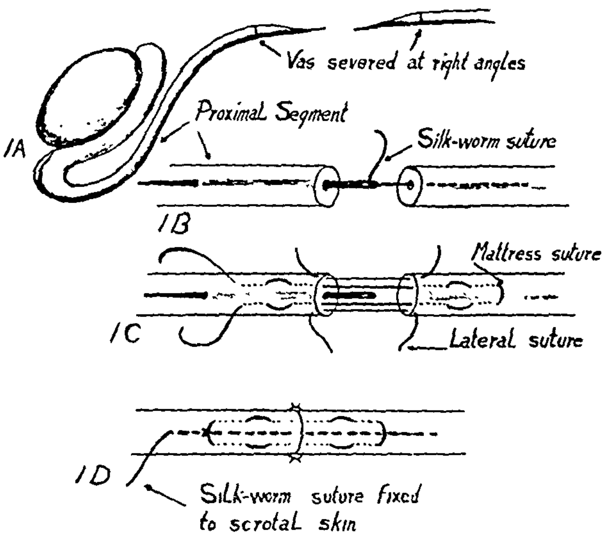

Schematic illustration of surgical technique. *A*, vas severed at right angles; *B*, needle piercing proximal segment of vas; *C*, placement of mattress and lateral sutures; *D*, anastomosis completed.

an independent medical examiner, in numbers varying from seven to over one hundred million spermatozoa per cubic centimeter. In 5 marriages pregnancy has occurred, resulting in 4 full term normal deliveries and 1 miscarriage.

Surgical Technic.—The fibrosed ends of the vas are delivered with a minimal amount of dissection in order to preserve the blood supply. Both segments of the vas are severed at right angles above the level of fibrosis (see illustration, *A*), and the patency of the lumen is ascertained by the introduction of a strand of silkworm sutures. It is often possible to express milky fluid containing sperm from the proximal segment of the vas by gentle compression of the epididymis.

A straight round pointed needle, armed with a strand of silkworm suture is introduced into the proximal segment of the vas, and made to pierce its wall at 1.5 cm. (see illustration, *B*). The free end of the silkworm suture is then advanced 8 to 10 cm. in the distal segment of the vas. The needle is maintained in position to stabilize the vas during the placement of a mattress suture of the type used by Stoffel in tenoplasty (see illustration, *C*) and two single lateral sutures. The lateral sutures are for stabilization, approximation being maintained by the mattress suture. The anastomotic sutures are of No. 5-0 arterial silk with a swedged-on needle. Care is taken to penetrate only the muscular wall of the vas. The needle is then carried through the wall of the vas, and the scrotal wall (see illustration, *D*) and the silkworm suture is fixed to the skin of the scrotum. In some instances, owing to the attenuation and friability of the proximal segment of the vas, the anastomosis is effected with three or four interrupted sutures of silk. I have recently used nylon as the splinting material, introducing it into the proximal segment through a 20-gauge hypodermic needle as suggested by Schmidt, and found it most satisfactory.

In 1 case anastomosis was successfully performed with three interrupted sutures of surgaloy and no splint. In this instance the sutures acted as a permanent splint.

In 2 cases of reoperation the anastomosis was effected over a 1 cm., 20-gauge stainless steel tube with flanged ends. The result was successful in 1 case. The second case is too recent to evaluate.

The experimental study of Schmidt indicates that epithelialization is complete at seven days and that muscular regeneration of the vas is well established at ten days and complete at sixteen days. In view of these data, I now leave the splinting suture in position for twelve to fourteen days.

COMMENT

Vasectomy performed close to the convoluted portion of the vas greatly increased the difficulty of anastomosis and in some instances made it impossible. In the cases reported the preoperative absence of sperm was ascertained by the referring physician and by myself. Testicular biopsy was not performed, on the assumption that in these previously fertile patients it would do more harm than good. This impression has been confirmed by Henri Bayle, who condemned testicular biopsy, being convinced that the slight hemorrhage contributes to subsequent fibrosis. It is the consensus that spermatogenesis is relatively unaffected by obliteration of the vas deferens. Bayle reported observing numerous mobile spermatozoa in 3 patients with congenital absence of the vas deferens, their respective ages being 41, 36 and 29 years. The successful results obtained in this series of cases are attributed to the method of splinting, careful approximation of the anastomotic site, minimal dissection and gentleness in the handling of tissues.

SUMMARY

Sterility following vasectomy was corrected successfully by anastomosis of the vas deferens in 90 per cent of the 20 cases reported in this series.

Any previous unsuccessful attempt at vasorrhaphy is not a contraindication to reoperation, as was evidenced by a successful result in 5 of 6 patients subjected to reoperation.

Testicular biopsy prior to vasorrhaphy was not performed in this series of cases.

Surgical occlusion of the vas does not appear to abolish spermatogenesis. Normal sperm were observed in 1 patient nineteen years after vasectomy.

Epididymovasorrhaphy should be attempted when anastomosis of the vas deferens is not technically feasible.

RIASSUNTO

Nel 90% dei 20 casi qui riportati la sterilità conseguente a vasectomia fu curata, con successo, anastomizzando il deferente.

Qualsiasi tentativo di vasoraffia fatto precedentemente senza un buon esito non controindica un nuovo intervento e ciò è reso evidente dagli ottimi risultati ottenuti in 5 o 6 pazienti sottoposti a reintervento.

In questa serie di casi non si fece mai la biopsia dei testicoli prima della vasorraffia.

L'occlusione chirurgica del vaso sembra che non abolisca la spermatogenesi. In un paziente si osservò, infatti, sperma normale a distanza di 19 anni dalla vasectomia.

Qualora non sia tecnicamente possibile l'anastomosi del deferente si può tentare l'epididimovasorraffia.

RESUMEN

La esterilidad consecutiva, a la sección de los conductos deferentes fué corregida con éxito por anastomosis de los conductos en 90 por ciento de los 20 casos reportados en esta serie.

Cualquier operación plástica que se haya intentado, previamente, sin éxito, no es contraindicación para reoperar, como pudo comprobarse por los resultados con éxito obtenidos, en 5 de 6 pacientes sometidos a reoperación. No se hizo biopsia testicular, previa a la anastomosis, en esta serie de casos.

La oclusión quirúrgica de los conductos no parece abolir la espermatogénesis. Se observó esperma normal en 1 paciente, diez y nueve años después de la sección de los conductos.

Plásticas con el epidídimo deben intentarse cuando la anastomosis del conducto no es posible tecnicamente.

ZUSAMMENFASSUNG

Die nach Samenstrangextirpation aufgetretene Unfruchtbarkeit [illegible] e 90 Prozent einer Reihe von 2

ten Fällen durch Anastomose des Samenleiters erfolgreich behoben.

Vorangegangene erfolglose Versuche einer Samenstrangnaht bilden keine Kontraindikation zu einem neuen Eingriff, wie sich durch die günstigen Erfolge an fünf von sechs wiederoperierten Kranken zeigen liess.

Probeexzisionen vom Hoden vor den Samenstrangnaht wurden in der vorliegenden Krankenserie nicht ausgeführt.

Der chirurgische Verschluss des Samenstranges scheint die Samenbildung nicht zu zerstören. Bei einem Kranken wurden normale Samenzellen 19 Jahre nach der Samenstrangsextirpation beobachtet.

Wenn eine Anastomosierung des Sameneiters technisch unausführbar ist, sollte ine Anastomosierung des Samenleiters mit dem Nebenhoden versucht werden.

RÉSUMÉ

La stérilité après vasectomie a été raitée avec succès par l'anastomose du anal déférent dans 90% des 20 cas rapportés ici.

Une tentative antérieure infructuese de uture du canal déférent ne constitue pas ne contre-indication à la réintervention, omme le démontre l'auteur dans 6 cas de a série.

Il n'a pas été pratiqué dans ces cas de biopsie testiculaire avant la vasorrhaphie.

L'occlusion chirurgicale du canal ne semble pas supprimer la spermatogénèse. Un sperme normal a été constaté chez un malade, 19 ans après vasectomie.

L'épididymo-vasorrhaphie devrait être tentée dans les cas où l'anastomose du canal déférent est techniquement irréalisable.

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> It is defeat that turns bone to flint, and gristle to muscle, and makes a man invincible. Do not, then, be afraid of defeat. You are never so near to victory as when defeated in a good cause.
>
> —*Beecher*

Neurologic Surgery

Operative Treatment of Cerebral Palsy Involving the Lower Extremities

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THIS presentation represents an eight-year study of cerebral palsy in children at the Meeting Street School in Providence, Rhode Island, from 1947 to 1955. The condition of each child in the Meeting Street School is evaluated, and his progress followed, by a pediatrician, a neurosurgeon, an orthopedic surgeon, a psychologist, a social worker, a physiotherapist, an occupational therapist and a speech therapist. Consultations by ophthalmologists, otorhinolaryngologists, and other specialists are readily available as the specific indication arises. Frequent group staff meetings are held for round-table discussion of the individual cases. In this integrated organization, orthopedic surgery is merely one facet in the comprehensive treatment of cerebral palsy in children. All patients are studied thoroughly for at least six months prior to the consideration of prospective surgical treatment.

In all, 250 children with cerebral palsy were treated at the Meeting Street School in the eight-year period between 1947 and 1955 (see table). Of these, 57 (23 per cent) were operated on, a total of 177 operative procedures being performed on the lower extremities (see table). Thirty-four patients underwent bilateral operations; 23, unilateral operations.

Analysis of Cases: Data on an Eight-Year Study of 250 Children with Cerebral Palsy, Meeting Street School, Providence, Rhode Island, with 177 Operations on 57 Patients (23 Per Cent)

Operation	*Times Performed*
Gastrocnemius recession, with section of motor nerves to gastrocnemius	73
Adductor myotomy with section of obturator nerve (4 crushings of obturator nerve)*	72
Soutter operation for flexion contracture (hips)	7
Lengthening of achilles tendon	6
Section of hamstring tendon for flexion contracture (knee)**	6
Stretching of calf muscle for equinus	5
Durham operation for internal rotation contracture (hip)	3
Yount fasciotomy (thigh)	1
Blount stapling of lower femoral epiphysis for unequal leg lengths	1
Transplant of achilles tendon slip to peroneus brevis; tenodesis for varus deformity	1
Gill posterior bone block (ankle)	1
Lambrinudi stabilization (foot)	1

*4 crushings of obturator nerve
**1 patient aged 11 years, 1 aged 10 years and 1 aged 4 years; 1 posterior capsulotomy of knee (Wilson)

As was pointed out by Phelps[1] in 1942, surgical therapy has considerable value provided definite spasticity of the involved

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muscles is present. Even in the "mixed" types of cerebral palsy, surgical intervention can be valuable if the specific muscle group operated on presents spastic involvement. In cases of the pure athetoid condition, peripheral orthopedic operations are almost always contraindicated except for arthrodesis procedures performed on the feet.

Green and McDermott,[2] in an excellent analysis, stated: "Surgical procedures, by reducing deformity, establishing better balance of motor power, decreasing the spasticity of muscles and simplifying the problem of control, are often an indispensable part of the process of rehabilitation."

It has been a rather frequent observation by members of the Meeting Street School Staff that, after operation on the lower extremities, movement and coordination of the trunk and upper extremities seemed to improve along with the improved balance that followed the operation. This has been remarked by a number of authors.

Age at Operation.—Given well-defined spastic deformities of the lower extremities, the earlier the age at which definitive surgical intervention is undertaken the better, to prevent disabling secondary contractures of joint capsules and neurovascular structures.

On the basis of the age at which the developmental progress and abnormal neuromotor patterns seem fairly well established, the optimal age for operation seems to be about three years. Fifteen of our operative patients were 3 years old or younger. The average age at the time of operation was 5½ years; the age range, up to 13 years. The youngest child was 19 months old. He had a highly spastic unilateral equinus, which responded well to recession of the gastrocnemius muscle and section of the tibial motor nerve to the gastrocnemius.

Mathews, Jones and Sperling[3] reported 32 cases of bony abnormality of the hip joint, consisting of subluxation or dislocation of the hip, in children with cerebral palsy. Appreciable valgus of the head and neck of the femur was commonly noted. Their paper, published in 1952, stimulated us to take routine pelvic roentgenograms of children with cerebral palsy, and we discovered 8 cases of subluxation of the hip and 1 case of frank dislocation, the latter presumably of the congenital type (Figs. 1 and 2). The subluxations responded simply to adductor myotomies and obturator neurectomy, followed by the use of abduction casts or wide Denis-Brown splints. In 2 cases of subluxation and the 1 case of dislocation of the hip the conditions were noted before the children were 3 years old.

This represents a compelling reason for early operation in cases of well-defined spastic adduction contractures of the hips. Roentgenograms of the pelvis should be taken routinely in such cases.

Time in Hospital.—The average youngster was admitted to the hospital the day prior to the operation and was discharged three days after its performance. The postoperative course was supervised closely by Dr. Denhoff (the Medical Director of the Meeting Street School) and his staff. Morbidity was infrequent, consisting primarily of involvement of the respiratory tract in children who could not cough or swallow adequately. There were no fatalities.

Mental Status.—Care was taken to evaluate the prospective candidates for operation from the standpoint of gross intelligence and at least a fair degree of intelligence was considered a prerequisite. In a few selected cases of moderately severe mental retardation associated with cerebral palsy, however, operation has been done to simplify the nursing care of markedly "scissored" lower extremities. In 1 instance there seemed to have been some overall improvement in the total functioning of the child, apparently related to achievement of some degree of physical independence.

The most frequently encountered deformities of the lower extremities are adduction of the hip, flexion of the knee and equinus of the ankle. This has been the experience of other observers.[4] Less commonly observed have been flexion and internal rotation contractures of the hip, genu valgum and valgus and varus deformities of the foot.

It is essential to realize, as was emphasized by Phelps,[5] that in any case of spastic paralysis three types of muscles may be observed: (1) spastic, (2) normal, (3) flaccid and paralyzed. A careful muscle survey should be made, since the interrelation of the muscle groups will determine whether operation is indicated and, if so, the operative procedure of choice. In some instances it is necessary to examine the child on several occasions to obtain an adequate analysis of the muscular functional relation. Failure of proper evaluation of the power of the antagonist muscle groups was primarily responsible for the poor results in certain cases of our series.

It is axiomatic that operation must be preceded and followed by adequate, intelligent physiotherapy and occupational therapy.[6] The surgeon attempts to bring the antagonist muscle groups into gross equality and, as described by Crothers,[7] the operations are usually devised to give balance by subtraction of power.

It has been our practice to make a motion picture of each child before and after operation, since we have noted that clinical impressions are often misleading in retrospect and that muscle charts alone do not yield an accurate picture of the dynamic walking pattern. We consider the motion picture records of great value in the study and evaluation of the operative procedures

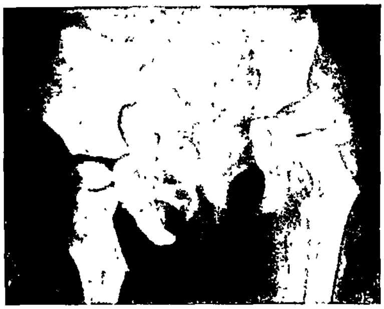

Fig. 1.—Roentgenogram of 2-year-old girl with [illegible] of the left hip and [illegible] at this early age, with mild dysplasia of acetabulum.

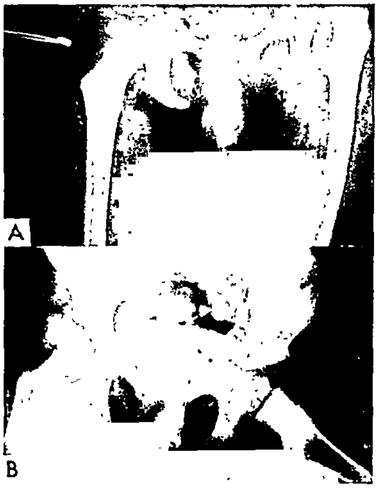

Fig. 2.—*A*, 2-year-old boy with severe spastic adduction contracture and complete dislocation of left hip. Discovered in routine pelvic roentgen studies of children with cerebral palsy. *B*, roentgenograms taken three months after operation (adductor release and section of anterior branch of obturator nerve). Wide abduction with long leg casts for six weeks, followed by abduction splint of Denis-Brown type. Note progressive reformation of acetabular roof and improved position of femoral head.

and the child's overall progress.

The Hip.—The most common deformity, and the most disabling one, is adduction contracture of the hip with resultant "scissoring" of gait. Adductor myotomy combined with obturator neurectomy (Stoffel operation[8]) has been valuable in treating this deformity. Through a longitudinal incision 2 inches (5 cm.) long in the anteromedial aspect of the upper part of the thigh, beginning at the inguinal fold, the adductor longus muscle is picked up near its point of origin by hooking the index finger underneath it and is severed transversely, the distal stump being wiped downward with a sponge. The anterior branch of the obturator nerve, running obliquely across the adductor brevis muscle, can be pinched gently to identify its motor action, and a 1-inch (2.5 cm.) segment is excised from the nerve. The adductor brevis muscle is then sectioned, and the gracilis muscle is similarly divided and wiped downward. Little bleeding is ordinarily encountered during the operation.

Formerly, in cases of severe adduction contracture, it was our practice to section the posterior branch of the obturator nerve as well, and to divide the adductor magnus muscle. The pectineus muscle and a weakened adductor magnus (which has additional innervation from the sciatic nerve) then functioned as adductors of the hip. Several years ago we encountered an unpleasant complication—a resultant abduction contracture of the hips in 2 cases. Since then we have discontinued sectioning the posterior branch of the obturator nerve. For severe adduction contracture we recommend division of the anterior branch of the obturator nerve, section of the adductor longus, adductor brevis and gracilis muscles, and crushing of the posterior branch of the obturator nerve as advocated by Barnett.[1] This permits regeneration of the posterior branch of the nerve during the succeeding months and helps insure against the development of a rare abduction deformity.

In closure of the wound, it is important to approximate the deep fascia layer, in order to prevent the formation of an unsightly depression in the operative scar. A collodion or aeroplast dressing is applied over the wound. This is especially useful with girls, to prevent maceration and inflammation from the urine.

The extrapelvic approach for the obturator neurectomy is greatly preferred to the intrapelvic neurectomy. The posterior branch of the obturator nerve is spared by the extrapelvic technic, and the adductor muscles can be released as needed through the same operative incision.

Each of the lower extremities is immobilized in long-leg padded plaster of paris cast with a wide abduction bar, which is continued for six weeks. We have not used braces subsequently. The child is able to sit up with the casts on the day following the operation, and nursing care is simple.

For flexion contracture of the hip, the Soutter operation[9] is the treatment of choice. If the contracture is severe, the psoas muscle and also the contracted anterior capsule of the hip joint must frequently be divided to obtain adequate correction. In closure of the wound, only the subcutaneous tissues and skin are approximated. The lower extremities are placed in traction or in long leg casts, and the child is maintained supine in the corrected position, with a half mattress under the trunk and buttocks, for at least three weeks.

Internal rotation contracture of the hip, when mild, frequently responds to stretching under anesthesia and immobilization in long leg casts in marked external rotation for six weeks, followed by intensive physiotherapy. For persistent internal rotation contracture of appreciable degree, the Durham operation[10] is a reliable procedure, dividing the anterior contracted fibers of the gluteus medius and minimus muscles. Great care must be taken to avoid overgenerous division of these important muscles; otherwise a disabling abductor hip sway will result.

The Knee—Flexion deformity of the knee may be due to overstimulation of the hamstring muscles and gastrocnemius and/or weakness of the quadriceps muscle, or it may be a compensating mechanism for a spastic equinus contracture of the hip. Obviously, the treatment must be directed to the primary cause.

In cases of flexion contracture of the knee hamstring tenotomies have given gratifying results, especially when combined with recession of the gastrocnemius muscle heads. The latter will be discussed in detail in the therapy of spastic equinus. Eggers[11] advocated transplanting the sectioned hamstring tendons into the posterior femoral condyles, as well as dividing the patellar retinaculum, in order to decrease knee flexion and improve hip extension. We have not had occasion to perform this operation, but the procedure appears preferable to simple hamstring tenotomy.

In knee flexion of long duration associated with spasticity, the ligamentum patellae and the quadriceps muscle are stretched. Chandler[12] advocated tightening and strengthening the quadriceps mechanism by lowering the tibial tubercle and the quadriceps insertion. This has provided considerable benefit in some cases. We had had previous personal experience with 2 instances of extension contracture of the knee following this procedure, however, and have not employed it since.

Posterior capsulotomy of the knee (Wilson) is indicated when the flexion contracture has involved the joint capsule proper. When the flexion deformity has become irreversible from the standpoint of the soft tissues, supracondylar osteotomy of the femur is indicated.

The Ankle and Foot.—Spastic equinus was divided by Silfverskiold[13] into 2 significant groups: (a) equinus that is essentially inflexible with the knee fully extended but capable of being corrected passively with relative ease with the knee flexed to a right angle, and (b) persistent equinus, whether the knee is extended or flexed. With the first type he reasoned that the gastrocnemius muscle was the primary deforming factor, since when it was relaxed by flexing the knee the equinus contracture was overcome. Silfverskiold advocated lowering, or recession, of the gastrocnemius muscle heads below the level of the knee joint, converting a two-joint muscle into a one-joint muscle. In effect, then, he converted the gastrocnemius into a second soleus muscle, which now had its origin below the knee joint. In addition, he advised partial section of the tibial motor nerves to the gastrocnemius muscle, to reduce its power further. The soleus muscle remained unaffected, and could be used for push-off from the forefoot in walking.

With the second type, in which the entire calf muscle mechanism (gastrocnemius and soleus) is contracted, lengthening of the achilles tendon is indicated. This should be done as an "open" procedure and is a potentially serious operation in cases of spastic equinus. Should a calcaneus gait result, the patient is more disabled than he was before the operation.

We have performed the Silfverskiold operation (recession of the gastrocnemius muscle and section of the tibial motor nerves to the gastrocnemius) in 73 instances. We consider it the most reliable soft tissue operation for the spastic lower extremity, if the indications are properly met.

The operation is always performed

under tourniquet control, with the patient lying prone. In cases of bilateral involvement the two knees are preferably operated on simultaneously by two orthopedic surgeons who are familiar with the procedure. In this manner the operating time and the duration of anesthesia are kept to a minimum. When there are adduction contractures of the hips also, the two hip operations are also carried out simultaneously by two surgeons. At the conclusion of the procedures for hip release in bilateral operations the patient is turned over into the prone position; tourniquets are applied to both thighs, the knees are prepared and draped, and the Silfverskiold operation is performed on both knees. During the past five years, in bilateral procedures, we have routinely operated on both hips and knees in a single operative session. The average total operative time for the bilateral hip and knee releases has ranged between one hour and one hour and 15 minutes, and an unnecessary second operation has been avoided.

The Silfverskiold operation is done through a transverse incision in the popliteal crease, which minimizes any tendency toward keloid formation. A thigh tourniquet is used. The incision is deepened transversely through the deep fascia, and the two heads of the gastrocnemius muscle are exposed. Except for dividing and ligating the saphena parva vein, no ligatures are ordinarily needed. The tibial nerve is identified, and the motor branches coursing obliquely downward into the gastrocnemius heads are identified by gentle pinching and isolated. One or two branches will appear on either side of the tibial nerve, running into the respective gastrocnemius muscle head. One-half or more of the motor nerve branches to the gastrocnemius are sectioned, a small segment of each being excised. In handling the tibial nerve while identifying the motor nerve branches to the gastrocnemius heads the utmost care is necessary, since the popliteal vein lies immediately underneath the tibial nerve.

Each head of the gastrocnemius muscle is picked up on a curved Kelly clamp and cut transversely at its point of attachment, which frees it from the posterior aspect of the femoral condyles. Then the muscle heads are wiped down bluntly with a gauze sponge until they are below the level of the knee joint. Another word of caution: In sectioning the lateral head of the gastrocnemius one must bear in mind that the peroneal nerve is immediately adjacent and must be protected from injury. Closure of the wound is effected by the use of interrupted chromic catgut sutures for the deep fascia, the skin and subcutaneous tissues being closed with continuous sutures to save time. Wound healing in this region has routinely been prompt. Padded plaster of paris casts are applied from the toes to the upper parts of the thighs, with the feet in dorsiflexion (i.e., above a right angle), and the knees fully extended.

It is essential to cut out a window over the apex of the heels on the day after operation. In our earlier cases, despite heavy padding, pressure sores over the heels developed in a number of children without any overt pain. Since the heel windows have been cut out routinely, this complication has been eliminated. The casts are worn for six weeks, after which physiotherapy is administered.

Three recurrences of equinus have been observed. In each instance this was due to failure on our part to estimate properly the weakness of the dorsiflexor muscles of the feet; and it does not reflect on the merits of the Silfverskiold operation. One recurrence was treated by a Lambrinudi stabilization operation, 1 by a Gill posterior ankle bone block operation, and the third by the application of a calf-length dropfoot brace, which the youngster will wear until he is old enough for a bone stabilization procedure. It is essential that the power of the pedal dorsiflexors be evaluated properly. If these muscles are weak, foot drop and resultant equinus will recur despite release of the calf muscles, lengthening of the achilles tendon, or nerve section. In such cases the foot should be maintained at a right angle by a dropfoot brace until a satisfactory age for surgical treatment of bone has been reached. At that time a posterior bone block operation of the Gill or Campbell type may be carried out or, in the presence of a strong calf muscle, a foot stabilization operation of the Lambrinudi type.

The age of eight or nine years is considered the minimum age for surgical stabilization of bone. Since, as we have stated, we favor early operation on the soft tissues when definitive indications are present, it is understandable that few stabilization procedures are included in our series up to the time of writing.

Tendon transplantation to help overcome varus or valgus may be partially beneficial at the earlier ages. As was noted by Green and McDermott,[2] however, pedal arthrodesis, with or without tendon transplantation, offers by far the best results among operations performed on the foot.

SUMMARY

Follow-up studies are presented of children with cerebral palsy who have undergone operations for deformities of the lower extremities. A total of 177 operations on 57 patients is reviewed, and specific operative procedures are discussed.

An integrated team approach to the child with cerebral palsy is stressed. Surgical intervention is never considered until diagnostic studies are complete and sufficient follow-up data available to justify an attempt to arrive at a prognosis.

Given definite clinical spastic deformities of the lower extremities, operation should be performed at an early age, when developmental progress and abnormal neuromotor patterns appear fairly well defined. Three years seems the optimal age, and in the author's opinion the development of disabling secondary contractures of joint capsules and neurovascular structures is avoided when operation is performed at that time.

Orthopedic surgical treatment is merely one facet of the comprehensive treatment of cerebral palsy in children.

ZUSAMMENFASSUNG

Es wird über Nachuntersuchungen von Kindern mit Gehirnlähmung berichtet, an denen Operationen zur Behandlung von Entstellungen der unteren Extremitäten vorgenommen worden waren. Es liegt eine Nachprüfung von 177 an 57 Kindern vorgenommenen Operationen vor. Spezifische operative Eingriffe werden erörtert.

Es wird hervorgehoben, dass die Behandlung von Kindern mit zentraler Lähmung durch eine zusammengesetzte Gruppe von Spezialisten ausgeführt werden soll. Ein chirurgischer Eingriff sollte niemals in Erwägung gezogen werden, solange nicht alle diagnostischen Untersuchungen durchgeführt sind und genügend Nachuntersuchungen stattgefunden haben, um die Möglichkeit einer prognostischen Auswertung zu gestatten.

Wenn spastische Entstellungen der unteren Extremitäten mit Sicherheit festgestellt sind, sollte die Operation im frühen Alter ausgeführt werden, wenn Fortschritte in der Entwicklung und unnormale neuromotorische Symptomenkomplexe einigermassen klar erkannt werden können. Das beste Alter scheint das von drei Jahren zu sein, und die Verfasser glauben, dass, wenn die Operation um diese Zeit ausgeführt wird, die Entwicklung untaug-

lich machender sekundärer Kontrakturen der Gelenkkapseln und der neurovaskulären Gebilde sich vermeiden lässt.

Die orthopädisch-chirurgische Behandlung stellt nur einen kleinen Teil der umfassenden Therapie der zerebralen Lähmung von Kindern dar.

RESUMEN

Se presentan los estudios de la evolución (follow-up) de niños con parálisis cerebral sometidos a operaciones por deformidades de los miembros inferiores. Se revisaron 177 operaciones en 57 pacientes y se discutieron los procedimientos operatorios.

Se enfatiza la importancia del manejo del niño con parálisis cerebral por un grupo médico integral. La intervención quirúrgica solo debe considerarse cuando se tengan estudios diagnósticos completos y suficientes datos de evolución disponibles para poder justificar un intento de pronóstico.

En caso de evidencia clínica de deformidades espásticas de los miembros inferiores, la operación debe efectuarse a temprana edad, cuando el progreso del desarrollo y las cracterísticas de anormalidad neuromotora aparecen bastante bien definidas. La edad óptima parecen ser tres años y en la opinión del autor el desarrollo de contracturas secundarias de las capsulas articulares y de las estructuras vasculares se evitan cuando la operación se efectúa a esa edad.

El tratamiento quirúrgico ortopédico es solo una fase del tratamiento de la parálisis cerebral en niños.

RIASSUNTO

Vengono riportati gli studi fatti su bambini, con paralisi cerebrale, che furono sottoposti ad intervento per deformità agli arti inferiori: si passano in rassegna 177 interventi su 57 malati e se ne discutono le appropriate tecniche operatorie.

Non si deve intervenire chirurgicamente sino a che non si abbiano dei dati diagnostici completi e tali da giustificare un tentativo. Una volta appurate clinicamente le deformità spastiche degli arti inferiori si procederà all'intervento in un'età precoce quando i segni neurologici sono ben definiti.

L'età migliore sono i 3 anni e secondo gli autori è proprio se fatto in tale periodo l'intervento scongiura lo sviluppo di contratture secondarie delle capsule articolari e delle strutture neurovascolari.

Naturalmente la chirurgia ortopedica rappresenta solo un lato nelle cura globale della paralisi cerabrale nei bambini.

RÉSUMÉ

Les auteurs présentent une étude approfondie de la paralysie cérébrale chez l'enfant après opération pour malformations des extrémités inférieures. Un total de 177 opérations chez 57 malades sont passées en revue avec discussion des techniques spécifiques.

Les auteurs insistent sur les avantages d'un travail médical d'équipe. Une intervention ne doit, jamais être envisagée sans des examens diagnostiques complets, avec des données suffisantes pour permettre de poser un pronostic favorable justifiant l'opération.

Etant donné les malformations spastiques cliniques définies, l'opération devrait être pratiquée de bonne heure, alors que les progrès du développement des symptômes neuromoteurs pathologiques sont bien caractérisés. L'âge de 3 ans paraît le meilleur, et les auteurs extiment qu'une opération pratiquée à ce moment évite les contractures secondaires des capsules articulaires.

Le traitement chirurgical orthopédique n'est qu'un aspect due traitement adéquat

de la paralysie cérébrale chez l'enfant dans ces cas.

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Do not ask a man if a man has been through college; ask if a college has been through him.

—*Chapin*

No mortal has a right to wag his tongue, much less to wag his pen, without saying something.

—*Carlyer*

It makes a great difference in the force of a sentence whether a man be behind it or not.

—*Emerson*

Such as thy words are, such will thy affections be esteemed; and such will thy deeds be as thy affections; and such thy life as thy deeds.

—*Socrates*

Obstetric and Gynecologic Surgery

Placenta Praevia: Its Incidence, Diagnosis and Treatment

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THE obstetrician, in his relentless pursuit of a perfect record as to maternal and fetal mortality, has made considerable progress in the realm of placenta praevia. Improved maternal and fetal mortality rates are due to the greater availability of blood, the wider use of cesarean section, a heightened understanding of the pathologic process involved, a more intensive training than was given formerly to obstetricians, extensive patient education as to the dangers of bleeding in pregnancy, and, particularly in the interest of the fetus, expectant management when indicated.

The material covered in this report comprises the total number of deliveries from a general hospital (Baylor University Hospital) during the five years from 1950 to 1955. There were 32,305 deliveries of all types with 137 cases of placenta praevia, an incidence of 0.42 per cent. This incidence coincides with those reported from other investigations by Fitzgerald,[1] Grant,[2] Neilson[3] and Reich.[4] During this period there were 1,755 cesarean sections, an incidence of 5.4 per cent. The indication for cesarean section in 108, or 6.15 per cent, was placenta praevia.

Diagnosis was made in each particular case by characteristic history plus placentographic study or by observations typical of placenta praevia on sterile vaginal examination. Blood was always available prior to any examination. During the past several years there has been a tendency to treat painless bleeding of expectancy when it is not too serious. Expectant treatment included hospitalization, observation, transfusion and ready availability of blood in an attempt to carry the pregnancy past thirty-two weeks.

In these cases, location of the site of placental implantation is sometimes attempted by placentographic methods, as advocated by Borell,[5] Hartley,[6] Hiebert[7] and Whitehead.[8] Twenty-two of the 137 patients in our series reported some initial bleeding prior to thirty-two weeks and were treated by expectant therapy. The mean age was 29, the average gravidity 3.5, and the average parity 1.5. Ninety-eight and eight-tenths per cent were carried past thirty-two weeks before it was necessary to accomplish delivery, and 1.02 per cent delivered earlier. Some 15 per cent stated that vaginal bleeding had occurred in early pregnancy.

Placenta praevia was marginal in 51 per cent, partial in 10 per cent and central

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in 39 per cent. Cephalic presentations occurred in 87 per cent, breech presentations in 6.8 per cent, and transverse presentations in 4.8 per cent. Twins were delivered in 1.4 per cent.

The standard treatment at Baylor Hospital for central placenta praevia or placenta praevia that covers more than a marginal portion of the os is cesarean section. The amount of cervical dilatation must be taken into consideration, and section is the treatment if the patient has an unripe cervix or cervical dilatation of less than 5 cm. Twenty-nine patients, or 20 per cent, were delivered vaginally in this series. Artificial rupture of the fetal membranes and, in a few cases, pitocin were use to induce or hasten labor in the cases of several patients delivered by the vaginal route. It is important to remember in managing placenta praevia that rupture of the fetal membranes in the face of a transverse presentation, or posterior implantation of the placenta as described by Stallworthy,[9] can be dangerous. In the first instance additional manipulation is required, resulting in increased risk to the mother and the fetus. In the second instance, disproportion from the placenta riding over the sacral promontory occurs, displacing the presenting part anteriorly.

Cesarean section was performed in 108 cases, or 80 per cent. Fifteen were classic cesarean sections; 1 was extraperitoneal, and the remainder were of the low flap or the low cervical type. The technic of cesarean section is left to the operating surgeon, but the staff policy of the hospital is to avoid the placenta if at all possible, using a technic similar to that described by Butler[10] and Neligan.[11] By this technic one avoids making an incision directly through the placenta and, if possible, sweeping it to one side, and rupturing the membrane at the lateral placental margin. It is important to use an adequate incision, so that this manipulation may be carried out without too much difficulty. The amount of blood lost may be to some extent determined by the amount of time consumed from incision of the uterus to the clamping of the cord. One must remember that the fetus will lose considerably more blood if the incision is made through the placenta than if one avoids or goes around the placenta. In our series there was 1 case of recurrent placenta praevia after cesarean section. This substantiates, to some extent, Bender's premise[12] that manipulation of the lower uterine segment by conization, trachelorrhaphy and low cervical cesarean section predisposes to placenta praevia.

Delivery of the placenta, either vaginally or abdominally, is frequently accompanied by profuse and prolonged hemorrhage. The placenta is attached to the noncontractile lower uterine segment, and there is a diminution in the amount of decidua, with insufficient thromboplastin for local thrombosis. Rupture and tearing of the large dilated veins of the lower uterine segment frequently occurs. There may be some degree of placenta accreta, and forcible detachment of this leads to profuse bleeding. In some cases it is necessary to perform a rapid hysterectomy or, on occasion, to suture the bleeding vessels at the site of placental implantation prior to closing the uterus.

The management of vasa praevia or placenta praevia of a succenturiate lobe is much the same as the management of placenta praevia. In most cases, diagnosis is not made until after delivery has been accomplished by cesarean section.

Anesthesia in most cases was given by qualified physician anesthesiologists. Gas anesthesia was used in 84, or 61 per cent, of the 137 deliveries. This figure includes the 29 vaginal deliveries. In the remaining 52 cases, or 39 per cent, spinal anesthesia was employed. There has been a progressive increase over the past five years in the use of spinal anesthetics for patients not in acute distress because of blood loss. Decreasing fetal mortality rates reflect this increasing use of spinal anesthetics. In some 15 cases it was necessary to deliver the patient in various degrees of shock.

Simultaneous placenta praevia and placenta accreta, as reported in the literature by Israel,[13] Kistner[14] and Hu,[15] was not encountered in this series. Hysterectomy was not indicated in any of the cases.

Author	*Patients*	*Year Reported*	*Maternal Mortality, %*	*Fetal Mortality, %*
Mills	100	1948	0.00	16.5
Paalman and Hunt	134	1949	1.5	23.0
Johnson	201	1950	0.00	21.0
Stallworthy	245	1951	0.4	18.0
Neilson	220	1953	0.00	13.4
Schmitz	112	1954	0.89	22.3
Williams	105	1947	0.95	28.0
Hatten	59	1954	0.00	26.2
Davidson and Brunken	137	1956	0.00	13.0

The pediatricians at Baylor University Hospital have aided considerably in obtaining a low fetal mortality rate by their close cooperation with the obstetricians in these cases. Pediatricians are immediately notified of the amount of bleeding and the condition of the patient. Serial hemoglobin levels are determined, as the pediatricians are well aware that bleeding in cases of placenta praevia is partially fetal, and that the infants tend to be anemic. This is substantiated by the work of Butler,[10] Neilson,[3] and Neligan.[11] The gross fetal death rate, including neonatal deaths, was 13 per cent, with a survival rate of 87 per cent. The mean fetal weight was 5 pounds and 10 ounces (2,561.4 Gm.). The maternal morbidity rate was 1.02 per cent. There were no maternal deaths in the entire series. These rates, as may be noted in the accompanying table as taken from Hatten,[16] are low in comparison but still allow improvement in fetal salvage.

SUMMARY AND CONCLUSIONS

The management of placenta praevia at Baylor University Hospital over a period of five years is described. There was a fetal mortality rate of 13 per cent and a maternal mortality rate of 0. These low rates are attributed to several factors. The ready availability of blood, including immediately available O Rh-negative, low AB titer blood, is of great importance. Increased use of cesarean section, discontinuance of vaginal operative procedures, better instruction of the patient as to the dangers of bleeding in pregnancy and more intensive instruction and training of the physicians engaged in obstetrics are all important. The fetal mortality rate has been lowered by the expectant management of patients who have been pregnant less than thirty-two weeks. Of equal importance is ready recognition by the pediatrician that part of the bleeding associated with placenta praevia is from the fetal side and, in many cases, results in an exsanguinated infant.

ZUSAMMENFASSUNG UND SCHLUSSFOLGERUNGEN

Die während eines Zeitraumes von fünf Jahren am Baylor University Hospital angewandte Behandlungsmethode der Placenta praevia wird beschrieben.

Die fötale Sterblichkeitsquote betrug 13 Prozent, die mütterliche Sterblichkeit war gleich Null. Die niedrigen Mortalitätsziffern werden verschiedenen Faktoren zugeschrieben. Die sofortige Verfügbarkeit von Blut einschliesslich der Rh-negativen Gruppen und solcher mit einem niedrigen

AB-Titer ist von grosser Wichtigkeit. Weiterhin spielen die umfangreichere Anwendung des Kaiserschnitts, der Ausschluss operativer Eingriffe durch die Scheide, Belehrung der Patientin hinsichtlich der Gefahren von Blutungen in der Schwangerschaft und eine sorgfältigere Ausbildung der geburtshilflich tätigen Ärzte eine grosse Rolle. Die fötale Sterblichkeit wurde durch abwartende Haltung in der Behandlung von Frauen, die weniger als 32 Wochen schwanger waren, herabgesetzt. Ebenso wichtig ist der Beitrag des Kinderarztes, der feststellt, dass ein Teil der bei Placenta praevia auftretenden Blutung vom Fötus stammt und in vielen Fällen zur Entbindung eines ausgebluteten Neugeborenen führt.

RIASSUNTO E CONCLUSIONI

Viene descritta la cura della placenta previa al Baylor Univ. Hospital in un periodo di 5 anni. Si ebbe il 13% della mortalità fetale e nulla fu la mortalità materna. Questo basso indice di mortalità viene attribuito a diversi fattori. La pronta disponibilità di sangue incluso O Rh negativo e un basso titolo AB sono di grande importanza, come pure lo sono un più corrente uso del taglio cesareo, una più evoluta educazione delle paziente riguardo ai pericoli dell'emorragia in gravidanza e una più intensa preparazione e istruzione dei medici ostetrici. La mortalità fetale è stata abbassata col trattamento di attesa nelle donne che erano gravide da meno di 32 settimane.

Ugualmente importante si è dimostrato, da parte dei pediatri, il pronto riconoscimento che parte dell'emorragia associata alla placenta previa è di natura fetale e che in molti casi dà luogo ad un feto esangue.

RESUMEN Y CONCLUSIONES

Se describe el manejo de la placenta previa en el Baylor University Hospital en un período de más de cinco anos.

Hubo un índice de mortalidad fetal de 13 por ciento y un índice de mortalidad materna de 0. Estos bajos índices de mortalidad se atribuyen a varios factores. La pronta disponibilidad de sangre, incluyendo disponibilidad immediata, de O-Rh negativo, sangre AB, es de gran importancia. El uso creciente de cesáreas, supresión de procedimientos operatorios vaginales, mejor educación de las pacientes respecto al peligro de hemorragias durante el embarazo e instrucción y entrenamiento intensivos de los médicos encargados de obstetricia son factores importantes. La mortalidad fetal se ha disminuído por el manejo de espectativa en pacientes con menos de treinta y dos semanas de embarazo. De igual importancia es el pronto reconocimiento del pediatra de que parte de la hemorragia asociada con placenta previa es del lado fetal y, en muchos casos, resulta un niño exangüe.

RÉSUMÉ ET CONCLUSIONS

L'auteur dècrit le traitement du placenta praevia au Baylor University Hospital durant les cinq dernières années.

Le taux de mortalité foetale a été de 13%, celui de la mère de 0%. Une grande importance est attribuée aux facteurs suivants: disponibilité immédiate de sang, y compris le O Rh négatif, et sang titrant un faible AB; recours plus fréquent à la césarienne, abandon des techniques d'opérations vaginales, meilleure éducation des malades quant aux dangers des hémorragies durant la grossesse; enfin, formation et entraînement plus poussés des obstétriciens. Le taux de mortalité foetale a été abaissé grâce à la méthode expectante dans les cas où la grossesse était antérieure à 32 semaines. Il est important aussi pour le pédiâtre de savoir qu'une partie de l'hémorragie provient du foetus, et que celui-ci se saigne à blanc dans bien des cas.

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Nations begin to dig their own graves when men talk more of human rights and less of human duties.

—*Boeticker*

We do not keep outward form of order, where there is deep disorder in the mind.

—*Shakespeare*

The prejudiced and obstinate man does not so much hold opinions, as his opinions hold him.

—*Edwards*

Ophthalmologic Surgery

Enucleation with Integrated Orbital Implant

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THIS report relates five years' experience in evaluating a new integrated orbital implant in 24 patients. Its development, of course, owes much to the pioneering effort of Ruedeman, Cutler, Hughes and others. This implant (Figure 1) is made up of vitallium, a casting alloy consisting of chromium, cobalt and molybdenum, that rarely causes tissue reaction and is widely used in orthopedic and dental work. Because of its relative inertness, the alloy seemed to offer promise of overcoming the problems encountered with various plastics, metals and combinations of these materials. The size of the implant is important, since implants 14 mm. or larger not only are too heavy, but offer reduced motility. This implant is 13 mm. in both height and width. Its design, evolved through trial and error, and with the assistance of Austenal Laboratories, is simple in construction. In the hollow sphere there are numerous large openings, which serve two purposes: first, they facilitate suturing the implant to the tissue; second, they permit loose orbital tissue to pass through the openings and grow into the implant in such a way as greatly to reduce the likelihood of extrusion. To promote better adhesion of tissue to metal, the surface of the implant is left unfinished.

Ordinary silk, cotton and catgut sutures were found unsatisfactory, since they often disintegrate before the implant is firmly attached to the surrounding tissue. With the assistance of Davis & Geck's research department, nylon was found satisfactory, since nylon sutures usually remain intact for twelve to eighteen months. The technic is simple and seldom requires more than thirty minutes. After separation of the conjunctiva and tenon's capsule from the anterior eyeball, the individual rectus muscles are located, dissected and held with sutures or hemostats. After removal of the eye, gelfoam is placed and held under pressure in the cavity. Next, the implant, on which four nylon

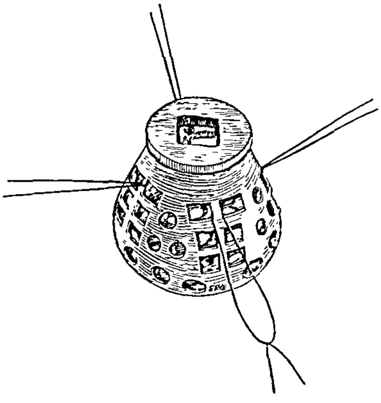

Fig. 1.—Karakashian vitallium implant.

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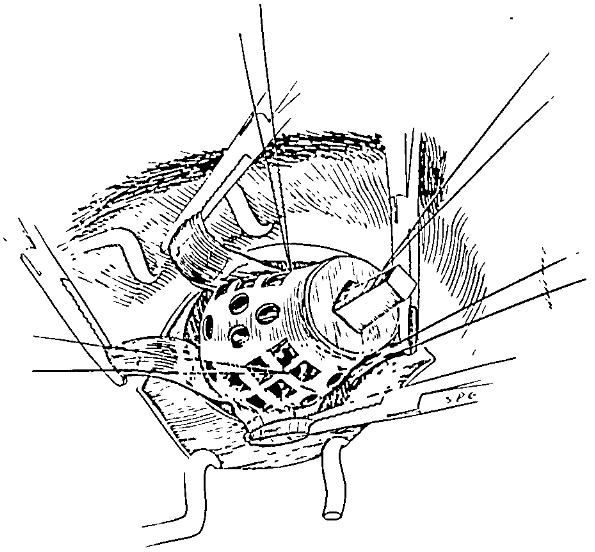

Fig. 2.—Placing implant, with sutures attached, in orbital cavity.

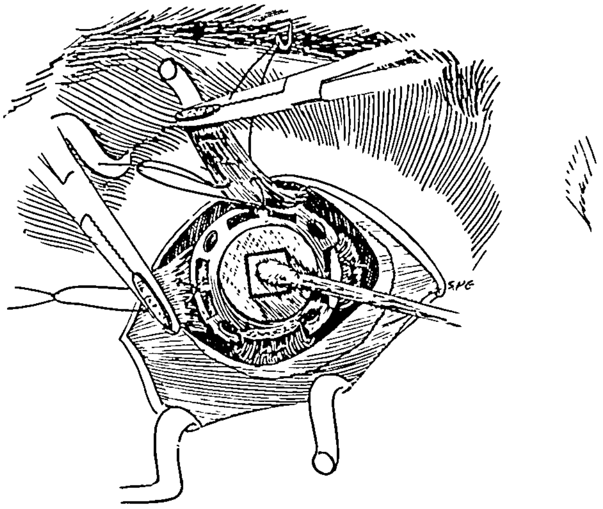

Fig. 3.—Attaching rectus muscles to implant with mattress sutures.

double-armed sutures have already been tied at intervals of 90 degrees, is placed in the cavity, as in Figure 2. The double-armed nylon sutures are placed through the individual rectus muscles and are tied to place the muscle in apposition with the implant in its line of action, as in Figure 3. One point of caution at this stage is the placing of double-armed nylon sutures in the superior rectus muscle. This must be placed as far back as possible, so that the implant is held in slightly upward tilt. A purse-string suture is used to bring the tenon's capsule to the neck of the orbital implant. This is followed in a similar manner with the conjunctiva, as in Figure 4. These sutures may be of silk or nylon. In contrast to the implantation of tantalum, with which the tenon and conjunctiva peel back and cause extrusion as in Figure 5, the purse-string sutures for fixing this implant to the tenon and conjunctiva should not be tied tightly, since during the early stage of healing the tissues swell beyond their border, sealing the opening of the integrated implant. This can become a problem, for it is difficult to peel the tissue once it adheres to the vitallium.

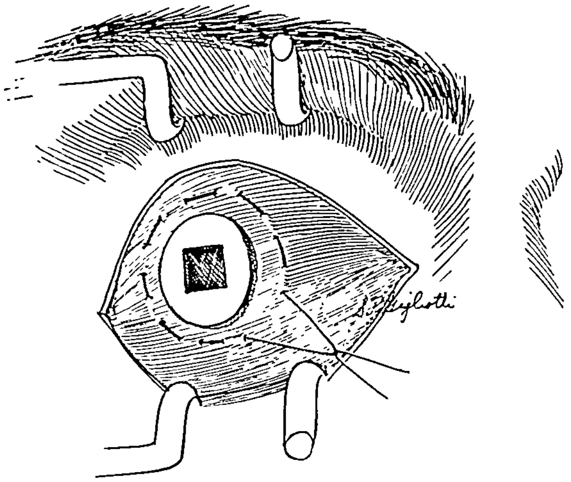

Fig. 4.—Purse-string suture of tenon and conjunctiva.

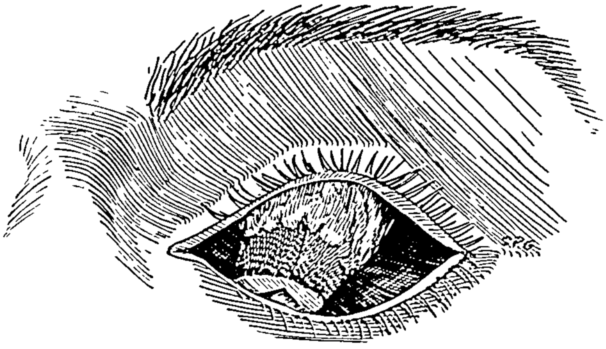

Fig. 5.—Tearing of conjunctiva and tenon from neck of tantalum implant.

with other integrated implants, a large former with a peg is used postopera- ely to prevent adhesions in the conjunc- al sac. The conformer must be the gest one that the conjunctival sac will nit, in order to prevent shrinkage of ıt area and to preserve deep fornices ring the first three weeks of healing. is step, though it appears trivial, is of utmost importance, since it may ide whether the operative procedure ll result in good motility. The larger area between the lateral sulci and be- een the upper and the lower sulci, greater the area through which the osthesis will move. Moreover, it enables eye maker to use a larger prosthesis. e immediate postoperative care is as ual, except that Prednisolone is used, 5 . four times a day is given by mouth three days and thereafter reduced to ice a day for another week. Two or ree weeks after the operation the patient usually ready for the eye maker. Even th the first prosthesis the results have en excellent, with respect to both otility and comfort. Naturally, this rt of the procedure should not be left tirely to the eye maker. The patient ould return with the first prosthesis and tested for motility with the fixation ht, the eye maker to center the pupils the light reflex.

The first patient in a series of 24 was erated on in March 1951. There have en no extrusions. All patients are under rveillance and are checked four times year. In general, irritations, secretions d other sequelae subside eight weeks ter the operation. Owing to the inert alities of the metal, the implant is sily tolerated. In the first two months llowing the operation the patient is in- ructed to remove the prosthesis twice a ek and irrigate the socket with sterile line solution after carefully washing his her hands and face. Handling of the prosthesis with clean hands is always stressed, since failure to do so is considered one of the reasons for undue irritation and infection. After eight weeks the prosthesis is removed only once a week for irrigation of the socket. The medicament used to prevent secondary infection is 30 per cent sodium sulfacetamide, of which 2 minims are administered three times a day for the first two months: then 2 drops twice a day thereafter, as necessary.

SUMMARY

This article describes a light vitallium integrated orbital implant which is easily tolerated, simple to use and allows greater adjustment by the eye maker, with a history of no extrusions thus far.

The implant offers the following advantages:

1. Operating time is reduced to an average of thirty minutes in uncomplicated cases.
2. There have been no extrusions up to the time of writing (first case seventy months ago).
3. Motility is excellent.
4. Tissue reaction is minimum and secretions nil after eight weeks.
5. The normal fold of the upper lid is better retained.
6. The lower lid does not carry the weight of the implant as with nonintegrated implants.

The single disadvantage is the fact that the implant is more costly than are plastic implants.

CONCLUSIONES

El autor esta convencido de que se ha logrado un progreso definitivo con el uso de injertos integrales. El uso de vitalio, con el diseño y técnica aquí descritos han sido base del progreso así obtenido.

Infected Bursa Over a Hallux Valgus.—The infection usually occurs through the skin. Frequently the overdistended bursa ruptures to form a sinus; secondary infection then takes place. In a few instances the skin is calloused over the bursal area, and improper trimming results in infection. Where there is no associated sinus, the possibility of acute gout of the metacarpophalangeal joint must not be overlooked. One should search for tophi and, when possible, have the uric acid content determined. If the diagnosis of gout is favored, trial therapy with colchium is valuable, but penicillin should be given as well until the diagnosis of gout is confirmed.

The treatment of this infected bursa follows general principles. It is highly important that removal of the bursa, together with the underlying cause, e.g., a hallux valgus, should not be carried out until several months have elapsed after all signs of inflammation have disappeared. Even then the operation should be performed under antibiotic cover.

Terminal Pulp Space Infection.— This clinical entity is uncommon in the foot as compared with its incidence in a finger or a thumb. Its diagnosis and treatment do not differ from that of its counterpart. When it occurs in the foot, it is usually the great toe that is affected.

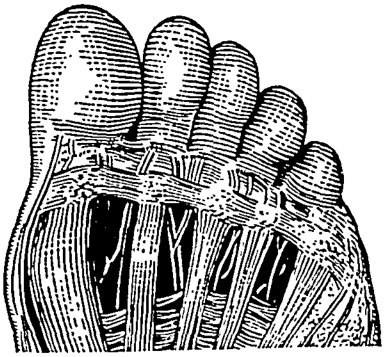

Fig. 1.—The four interdigital subcutaneous spaces between the five slips of the central aponeurosis.

Suppurative Tenosynovitis.—The flexor tendon sheaths of the toes are short. Each extends only the length of the toe and has no connection with any of the synovial sheaths of the tendons around the ankle—facts that tend to reduce the incidence of complications of suppurative tenosynovitis of a toe as compared with a corresponding lesion of finger or a thumb. Furthermore, should a partially or completely stiff digit result, the disability it occasions is infinitesimal when compared with that of a stiff finger or thumb.

Suppurative tenosynovitis of a toe is rare. The physical signs it produces are comparable in every way to those of infection of a tendon sheath of a finger that does not communicate with the ulnar bursa. When the symtoms and signs persist in spite of twenty-four hours of rest, elevation and antibiotic therapy, there should be no hesitation in opening the flexor tendon sheath throughout its length.

Infection of the Superficial Fascial Spaces of the Sole.—Like the palm of the hand, the superficial lymphatics of the sole converge on the dorsum by the shortest route, i.e., through the webs. Thus, when pus lies either superficial or deep in the sole, inflammatory edema is most evident on the dorsum. In most instances this edema also involves the ankle; less often it extends to the lower part of the leg. Pitting on pressure distinguishes edema of the dorsum of the foot from the indurated brawny swelling that is present when pus lies in the dorsal subcutaneous space.

The Interdigital Subcutaneous Spaces.—There are four interdigital subcutaneous spaces that lie between the five digital slips of the central aponeurosis (Fig. 1); the most medial space is larger than the others. Each of these spaces is roughly pyramidal and is filled with fat. Within each space lies a digital nerve, and in the distal half of each space the digital vessels gain entrance by penetrating the floor of the space. Proximally, the interdigital subcutaneous spaces communicate with the most superficial layer of the central plantar space 1 along the tunnels for the digital nerves. Distally each space communicates beneath the superficial transverse plantar ligament with the corresponding web space. A collar-stud abscess, with one abscess cavity lying within the calloused skin and the other occupying an interdigital space, is present occasionally.

Infection of one of these spaces is most common amongst coolies and others who work barefooted, especially in urban areas. Often the patient states that a sharp stone, a nail or a thorn has penetrated the sole. At other times the cause is infection via the lymphatics from an infected crack in the calloused skin overlying the space. Rao and Kini reported that in 19 of 23 cases the infecting organism was Staphylococcus aureus.

Diagnosis: The patient complains of increasing pain between the shafts of the two metacarpals that bound the infected space. Soon he is unable to walk, and the general reaction is moderately severe. Exquisite tenderness over the infected space proclaims the diagnosis. When the pus has decompressed itself into the dorsal subcutaneous space, localization is more difficult.

Treatment: Drainage must be placed away from the weight-bearing area of the sole. The best incision is that used for drainage of a web space (see Fig. 3). A hemostat is directed into the cavity filled with pus, and its jaws are opened. Tube drainage is required. In the case of a collar-stud abscess, both pockets must be drained separately through the same cutaneous incision. When pus has burrowed posteriorly through the apex of the space, an incision or a counterincision is made in the line of the digital nerve in the pliable non-weight-bearing skin of the fore part of the instep. When an extension into the dorsal subcutaneous space has occurred, a counterincision is required in the line of

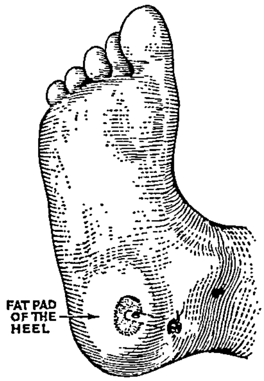

Fig. 2.—Drainage of an abscess of the heel space. The incision is placed above the calloused skin covering the heel.

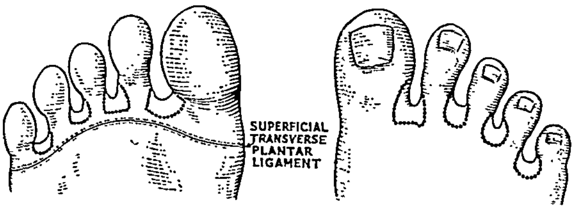

Fig. 3.—The web spaces, showing the extent on the plantar and dorsal aspects of the foot.

the tendons, nerves and vessels, near to the base of a toe.

The Heel Space.—The fat pad of the heel, which is situated in the subcutaneous portion of the posterior third of the sole, is oval, the long axis lying anteroposteriorly. Dense fibrous strands extend from the skin to the plantar fascia, so as to divide the fat pad into numerous small compartments; consequently the spread of pus from one compartment to another within the space is slow. Unexpectedly, infection seldom occurs as a result of such accidents as treading on a thorn; the usual portion of infection is a crack in the overlying calloused skin. In one-third of the cases the pus is subcuticular; in the remainder the pus lies in the subcutaneous heel space proper. In a few cases a collar-stud abscess involves both these situations.

Diagnosis: Steadily increasing throbbing pain is the leading symptom; it becomes so severe as to interfere with sleep. The patient dares not put his heel on the floor. Swelling of the soft tissues that cover one or both sides of the calcaneum is present, and in cases of severe involvement edema of the ankle becomes manifest. Acute tenderness r t and possible fluctuation. the diagnosis.

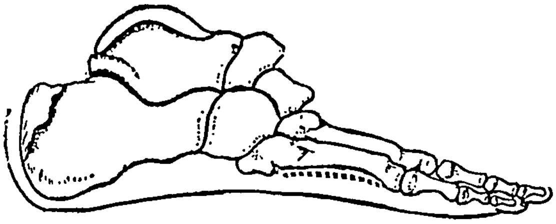

Fig. 5.—Incision for draining the central and medial plantar spaces.

Treatment: Usually, by the time the patient presents himself, the abscess is ready for incision, which is made at the side of the heel so that the scar does not lie on a weight-bearing area. Fibrous septums within the abscess of the fat pad of the heel need division with a scalpel. When the abscess is subcuticular a small ellipse should be removed from one or other of the lips of the incision, in order to prevent premature closure of the skin. In the case of a collar-stud abscess both pockets are opened through a single cutaneous incision. In all cases tube drainage (Fig. 2) is necessary for two or three days. For an abscess occupying the whole space, through-and-through drainage is best.

*Infection of the Web Spaces.**—The web spaces, four in number, extend onto the dorsal as well as the plantar aspect of the foot (Fig. 3), the space between the great and th d toe being larger than e e spaces are filled with sels and nerves pass arts of these spaces. cates with (1) the ital subcutaneous rficial transverse the subcutaneous ts, and (3) the

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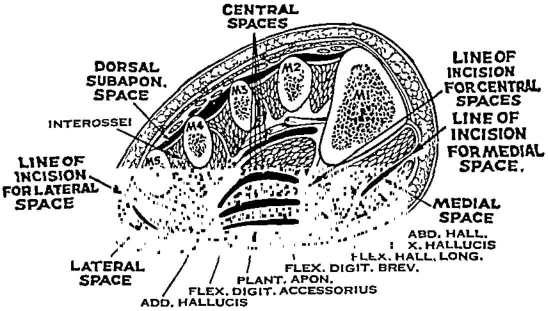

Fig. 6.—Transverse section through the middle of the metatarsals, showing fascial spaces. The lines for opening the lateral, medial and central spaces are shown. Note especially that each of the four compartments of the central space can be opened by the same incision if the fascial septum is incised (after Grodinsky).

The diminutive lumbrical tendon passes through the proximal part of the space and, as in the hand, it can serve as a conductor of pus, in this instance to bring the web space into communication with the corresponding interdigital subcutaneous space.

Diagnosis: There is localized tenderness over the dorsal and the plantar aspect of the web.

Treatment: Drainage is effected by making an incision through the plantar aspect of the space, care being taken not to injure the superficial transverse plantar ligament. When necessary, a counterincision is made on the dorsum and through-and-through drainage thereby effected. A piece of corrugated rubber is always left in place for at least twenty-four hours.

Infection of the Deep Fascial Spaces of the Sole.—There are three deep fascial spaces in the sole—a medial, a central and a lateral space. The medial and the lateral space are of subsidiary importance, for they are comparatively rarely infected.

The central plantar space is arranged like an apartment house of four stories. On the first (ground) floor is plantar space I, which lies betwen the plantar fascia and the flexor digitorum brevis. On the second floor lies central plantar space II, which is situated between the flexor digitorum brevis and the flexor digitorum accessorius. On the third floor is central plantar space III, floored by the digitorum accessorius and roofed by the adductor hallucis. On the fourth floor is central plantar space IV, which is floored by the adductor hallucis and roofed by the metatarsal bones, their ligaments and the interosseus muscles.

Infection of the various floors of the central plantar space (Fig. 4) becomes increasingly less common as one proceeds from the ground floor upward. The usual cause of infection of the central plantar

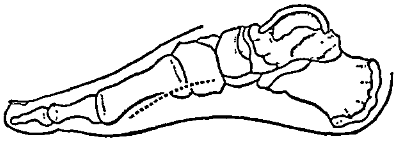

Fig. 7.—Incision for draining the lateral plantar space.

space is a penetrating wound or, more frequently, extension from an undrained empyemia involving an interdigital subcutaneous space. Central plantar space IV can become infected from osteomyelitis or an infected compound fracture of a related metatarsal bone.

The lateral plantar space is situated between the abductor hallucis on the dorsal aspect and the flexor hallucis brevis on the plantar aspect. It communicates with the dorsal subaponeurotic space around the medial side of the foot.

The medial plantar space is situated between the flexor digiti minimi brevis on the dorsal aspect and the abductor digiti minimi on the plantar aspect. It communicates with the dorsal subaponeurotic space around the lateral aspect of the foot.

Diagnosis: The most valuable guides to pus deep in the sole are swelling in the dorsum of the foot and tenderness of the instep. That the instep is acutely tender serves to distinguish the condition from infection of an interdigital subcutaneous space, but one must be mindful of the fact that the central plantar space is frequently infected from an interdigital subcutaneous space along the tiny tunnel that accommodates the digital nerve. When uncertainty prevails as to where the pus is situated, the foot should be raised on pillows, antibiotic therapy administered and another examination made in a few hours. Undue delay is dangerous; in addition to the fact that it increases toxemia, one of the following local complications is likely to supervene.

Complications of Infection of the Central Plantar Space: When pus is present in plantar space II and is not evacuated, the chances are that it will travel along the line of least resistance and spread from the sole to the medial space of the leg via the long flexor tendons. Likewise, when pus in plantar space III remains undrained, it tends to track along the tendon of the peroneus longus to the lateral leg space. Pus in plantar space IV eventually decompresses itself between one or other sets of the interosseus muscles into the dorsal subaponeurotic space.

Treatment.—For drainage of the central plantar space, an incision about 1 inch (2.5 cm.) long, parallel to and just above the medial border of the foot in the neighborhood of the instep (Fig. 5) supplies a direct approach and free drainage and prevents leaving a scar on the pressure-bearing area of the sole. Keeping close to the bone, the incision is deepened until the intermuscular septum is reached (Fig. 6); this is incised at a level near the sole, and compartment I is entered. If pus is not present in space I, the incision must be extended distally to the level of the base of the first metatarsal. The incision in the aponeurosis is extended, and the flexor digitorum brevis is exposed. Its medial border is identified, and a hemostat is passed above the muscle and directed dorsally and toward the heel. Any one of the three deeper spaces can be explored through this incision. At the level where the pus is struck the hemostat is directed toward the neck of the fourth metatarsal, well opened, and a drainage tube is inserted.

In the rather unusual event that plantar drainage proves insufficient, a counter-incision is made on the dorsum of the foot in the fourth intermetatarsal space. The skin and subcutaneous tissues are opened, and the extensor tendon slips to the toes are identified. They are retracted; the aponeurosis is incised, and a hemostat is thrust into compartment III or IV of the central plantar space, whichever is the seat of the abscess. The jaws of the hemostat are opened, and the space is drained through the dorsal incision. The dorsal approach should be used only if drainage through the medial incision described proves ineffectual after several days.

After-Treatment: Rest on a back splint, with the leg raised on pillows or, preferably, swung in a Bloxham's cradle, is maintained for two or three days, or until the pulse and temperature are normal. The patient should then be taken to the operating theatre and the wound or wounds packed lightly with petroleum gauze. A plaster cast is then applied. After the patient has been returned to bed, the limb is again elevated. Fixation in plaster is most important; otherwise contractures are liable to occur, resulting in a considerable deformity of the foot that is most difficult, or even impossible, to correct. After ten days or a fortnight, unless there is some indication for doing so before, the plaster cast is removed and renewed. The patient can be ambulatory during this period, but the cast should be retained until the wound has healed. After removal of the plaster edematous swelling is prone to occur and is most disabling; for, although it is not usually associated with much pain, the increased size of the foot makes it impossible to wear an ordinary shoe. Swelling can be prevented by the application of an Unna paste bandage to the foot and leg immediately after removal of the cast. The bandage must extend from the base of the toes to the tuberosity of the tibia, and it should be kept on for six weeks or longer if the tendency to swell is persistent. When the bandage becomes dirty, it is changed. In due course an orthopedic shoe will be required in most cases.

Drainage of the Lateral Plantar Space: To evacuate pus from the lateral space the incision shown in Fig. 7 is employed. The incision passes through the skin and subcutaneous tissue, and the space is opened widely by incising the deep fascia. Corrugated rubber drainage is provided.

Drainage of the Medial Plantar Space: The incision is almost the same as that advised for the central plantar space (see Fig. 5), but it should be made a little more toward the plantar aspect of the foot and over the site of maximum tenderness. To summarize, it should be the rule always to evacuate pus from the plantar aspect of the foot through an incision over either the medial or the lateral border of the foot. Such incisions not only provide adequate drainage but insure that the subsequent scar is well away from the weight-bearing area.

Infections of the Dorsum of the Foot.—The dorsal subcutaneous space is usually infected by an extension of infection from a subcutaneous interdigital space or a web space. Occasionally localization of infection occurs in the space, when infection spreads from the sole to the dorsum by way of the lymphatics; such localization is always distal to the dorsal venous arch. The incision should be placed in the line of the vessels or nerves, in order to avoid them.

The dorsal subaponeurotic space can be infected from direct puncture; it can also be involved from an extension of infection from plantar space IV. When infection of this space is suspected, aspiration should be attempted and the diagnosis confirmed before the incision is made. A longitudinal incision is then made alongside the needle The cavity is drained with corrugate rubber for twenty-four hours.

SUMMARY

The author lists as infections of the foot the following conditions: infected blister; paronychia; infected adventitious bursa associated with a corn; infected bursa over a hallus valgus; terminal pulp space infection; suppurative tenosynovitis; infection of the interdigital subcutaneous spaces, the heel space, the web spaces, the deep fascial spaces of the sole, the central, medial and lateral plantar spaces he dorsal subcutaneous space and th

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subaponeurotic space. Diagnosis and treatment, including drainage, are briefly outlined.

RÉSUMÉ

Parmi les infections du pied, l'auteur énumère les états suivants: cloque infectée; paronychie; bourse adventice infectée associée à un cor; bourse infectée sur un hallux valgus; infection de l'espace pulpaire terminal; ténosynovite suppurante; infection des espaces interdigitaux sous-cutanés, des espaces au niveau du talon, des espaces-réseaux, des espaces fasciaux profonds de la plante du pied, des espaces plantaires central, médian et latéral, des espaces dorsal sous-cutané et dorsal subaponévrotique.

Le diagnostic et le traitement, y compris le drainage, sont brièvement exposés.

RIASSUNTO

L'autore elenca le seguenti forme di infezione del piede: callo infetto, paronichia, borsite sierosa associata a callo, borsite e alluce valgo, infezione dello spazio pulpare terminale, tenosinovite purulenta, infezione degli spazi interdigitali, dello spazio calcaneare, degli spazi fasciali profondi plantari, degli spazi plantari centrale, mediale e laterale, dello spazio dorsale sottocutaneo e dello spazio dorsale sottoaponeurotico.

Viene descritta brevemente la diagnosi e la cura (compreso il drenaggio).

ZUSAMMENFASSUNG

Der Verfasser gibt die folgende Aufstellung infektiöser Erkrankungen des Fusses: Infizierte Hautblase; Nagelwalentzündung; zusätzliche Infektion einer Bursa beim Hühnerauge; Infektion eines Schleimbeutels über einem Hallux valgus; Infektion der Weichteile der Zehenspitzen; eitrige Sehnenscheidenentzündung; Infektionen der subkutanen Räume zwischen den Zehen, am Hacken in den tiefen Faszienräumen der Fussohle, in den zentralen, medialen und lateralen Räumen der Planta, im subkutanen Gewebe und im subaponeurotischen Raum des Fussrükkens. Die Diagnose und Behandlung dieser Zustände einschliesslich der Drainierung werden kurz besprochen.

RESUMEN

El autor enumera como infecciones del pie las siguientes condiciones: flictena infectada; paroniquia; bursa adventicia infectada asociada a callosidades, infección del espacio pulposo terminal; tenosinovitis supurativa; infección de los espacios interdigitales subcutáneos, el espacio del talón, los espacios profundos de la fascia plantar, central, media y lateral, el espacio subcutáneo del dorso del pie y el espacio subaponeurótico del dorso del pie. El Diagnóstico y tratamiento, incluyendo drenaje, se mencionan brevemente.

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An Orthopedist Looks at Collagenous Tissue Diseases

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PHYSICAL reactions in the morning are highly relevant to fibrous tissue, for at that time one tends to be a little "stiffer" than on the night before. Over night there is a tendency to "tighten up" with the relative inactivity of the body. The morning impulse to "loosen" results in a stretch, a yawn and, in the more ambitious, setting-up exercises. The limber cat finds itself arising and stretching periodically, even though it may then resume its nap.

Early in the study of anatomy and histology one is struck by the remarkable prevalence of collagenous tissue in the body, together with its extensive fibrous tissue sheathings surrounding the cells, groups of cells, tendons and organs, and ramifying as fascial planes and ligaments. The intricate relation of nerves, blood vessels and lymphatics wending their way through and by these fascial planes is a wonder to behold.

Time was when these collagenous tissue structures, together with bone, cartilage and teeth, were regarded as inert substance laid down within the body and not subject to the laws of living biologic substances. It is now known that these are truly living structures, constantly functioning in accordance with biochemical and physiologic principles; therefore, a better understanding of their function is possible. The knowledge that there is a constant living physiologic chemical exchange and replacement of the elements that make up these tissues enables one to apply genetic principles, laws of mechanical force, the effects of metabolic endocrine modulation, nutritional factors (vitamins, amino acids, minerals, etc.)[1] and Bernard's pharmacochemical together with Langley's autonomic balancing[2] to these, as well as the other tissues of the body.

In the presence of certain androgenic endocrine deficiencies the vertebrae demineralize as senile osteoporosis[3] with an increasing dorsal round back and pathologic compression fractures due to the weakened bony structure of the bodies. In the presence of hyperparathyroidism the generalized demineralization, with scattered localized fibrocystic areas, demonstrates a profound physiologic change of the bone physiology under an altered metabolic influence. In the same way, the collagenous fibrous tissues that make up tendons, ligaments, fascia and other connective tissues are to be regarded as living dynamic tissues.

Hisaw[4] in 1926 published an article concerning the relaxation of the pubic ligaments of the guinea pig, showing the effect of endocrine balance on fibrous tissue and pointing the way toward understanding of the cyclic nature of shortening and lengthening of fibrous tissue with the estrus cycle and the loosening of joints at parturition to allow the pelvis to spread, thus increasing the size of the birth canal. The theoretical substance "relaxin," elaborated as a result of metabolic balance,

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From the Billig Clinic, Los Angeles.

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has been postulated as the controlling factor in fibrous loosening or relaxation, and, as has been mentioned, varies in relation to the changing hormone level of both the estrus cycle and the duration of pregnancy.

In a different approach (of the enzymatic chemical type) to analysis of the cementing substance of fibrous tissue, it has been noted that hyaluronic acid controls the shortening (contracture), tightening, stiffness and density of collagenous tissue. Hyaluronidase[5] neutralizes the hyaluronic acid and hence plays an intimate role in the loosening of this collagenous tissue, which forms the binding framework that holds the body together; areolar tissue beneath the skin, the fibrous connective tissue making up fascial planes, joint ligaments and capsules, the fascia and ligaments (including the ligamentum flavum), the fibrous tissue sheath of each muscle fiber (sarcolemma), group of muscle fibers, muscles and tendons; the fibrous sheath of each nerve fiber (neurolemma), group of nerve fibers and nerve, and of the cells and body of each organ. Commercial preparations of hyaluronidase are widely available and are used for local aid in increasing subcutaneous fluid infusion and loosening fibrous contractures in order to mobilize joints (hallux rigidus, frozen shoulder, etc.).

Independently investigating the factors in mobilization, Chamberlain[6] has demonstrated roentgenographically the variation in tightening and loosening of the pelvic joint ligaments according to the changes in cyclic metabolic endocrine balance of the menstrual cycle and of the term of pregnancy.

The fibrous tissue that makes up the capsule and joint ligaments of the various joints has been extensively investigated by Mennell,[7] who showed that, when contracture of the periarticular fibrous tissue becomes sufficient to inhibit full play of the so-called shearing (gliding or "uncontrolled") motion, the joint range of motion will be restricted and the attempt to force a normal joint range will result only in damage by tearing and possible subluxation. This is well recognized with regard to such areas as the knee, where flexion contractures can so easily be changed into posterior subluxations of the tibia on the femur if forceful extension of the joint is incautiously applied. It has been emphasized that a posterior capsulotomy with loosening of the femoral subperiosteum may often be necessary to regain the normal shearing motion by enabling the tibia to glide forward on the femur, without which extension of the knee is impossible. In "The Art and Science of Joint Manipulation," written by Mennell[7] out of a world of experience as long-standing chairman of the department of rehabilitation at St. Thomas' Medical School and Hospital in London, are shown the technics of restoring the shearing (gliding) motion for each particular joint throughout the body.

Hand surgeons (e.g., Bunnell[8]) have emphasized the importance of not forcing the range of motion of a joint. They advocate, rather, letting the range of motion return (as it will) by gentle motion after restoration of the shearing motion (e.g., by Mennell technics).

In the extensive fibrous contractures that often occur in arthritic joints, recovery of the range of motion must be preceded by restoration of this shearing motion, variously referred to as "tangential," "gliding," "uncontrolled" or "slipping." If the joint ligaments are so relaxed as to allow abnormalities of this motion, subluxation (partial dislocation) or complete dislocation may occur. A characteristic of certain glandular deficiencies is, at times, extreme laxity of the joint ligaments, so that the carpal bones, for example, "fall apart" and impinge in subluxations and dislocations upon each other. This also tends to occur when the joint ligaments have been torn or avulsed from their bony attachments. When joints have been traumatized by forcing the range of motion past the ligamentous restriction, as may occur when the facet joints of the spine are affected by the jerk of falling or diving, or by a rear-end motor collision, they must be restored to their proper position and held there until the joint ligaments have had a chance to "tie down" in healing and once more perform their proper function of limiting the range of motion short of subluxation or dislocation. Otherwise, periodic subluxations will occur and can be recognized as, for example, "kinks in the neck," often taking days to weeks to "wear off." Subluxation is a mechanical malalignment that throws intense strain on the surrounding fascial and ligamentous planes, causing them to constrict the pathways of motor, proprioceptive and autonomic nerves and resulting in peripheral involuntary muscle contraction (spasm or fasciculation), pain, tingling, numbness and vasomotor phenomena. In the neck this frequently results in autonomic cervical sympathetic stimulation, producing pains in the head and distortion of vision.[2a] An avulsion fracture is a good illustration of the pulling out of a piece of bone at the attachment of the ligaments or tendons when the joint is forced into subluxation past its limit of motion. The subluxation must be corrected and the avulsed bone immediately replaced and held there, else recurrent subluxations will result. A common example of this is "baseball finger."

In persistent repeated manipulation[7] of a joint to restore the gliding motion and achieve an increased range of motion, there is a progressive accumulative fibrous stretching that loosens the capsule to its normal laxity. Past this point the manipulation should not be carried, else subluxation may occur. Manipulation of a joint under anesthesia to achieve remobilization at "one fell swoop" is to be condemned, as it causes drastic tearing damage to the periarticular structures, with hemorrhage, and, in healing, the production of that much more constricting contracture of fibrous tissue. The history of medicine contains the record of a disastrous era when such approaches to joint mobilization were employed.

Study of the elasticity of fibrous tissue and of the various factors affecting its production, shortening and lengthening are the keys to the control of many common afflictions. Studies of wound healing show that in healing by first or "primary" intention a fibrous formation takes place from fibrin and the surrounding cells, bridging the gap throughout the depth of the lesion, and that this fibrous tissue then *contracts* to bind the wound edges into approximation and hold them there. Healing of a wound by "secondary intention," in which the edges of the wound cannot be brought together at the outset, must take place progressively from inside out, so that the shortening contraction of the fibrous tissue formation will close the wound progressively, proceeding from the depth outward to the surface. It is well recognized that the surface must be kept open to allow this to happen, without production of a "dead space"; else necrotic material, hematoma (filling the "dead space"), or infection will be enclosed and the wound break down secondarily or a heavy, thick scar result. Gentle, repeated kneading distention massage of a scar will progressively stretch and loosen the fibrous tissue and soften the scar. Here again is an example of the ever-present balance between the tightening and loosening of fibrous tissue.

The tendency associated with certain types of arthritis, toward excessive production of fibrous tissue that tightens about the joints and produces disabling contractures is well recognized. In the past, the physical treatment of rheumatoid arthritic joints was a nightmare to the patient and a perplexing problem to the doctor. If joint motion was not sufficiently maintained, freezing contracture ensued. In maintaining joint motion, however, irritation of the joint flared up, with pain, edema and inflammation leading to further contracture. A delicate balance of motion versus too much irritation is an extremely difficult thing to accomplish.

A useful bit of knowledge gained from the arthritic patient is that, in the freezing of a joint, fibrous contracture always precedes the bony marginal overgrowth, so that, in mobilization, the resistance encountered is that of fibrous contracture and the limitation of the joint range of motion is mostly fibrous. This is easily understood when one recalls the examples of relatively nonfibrocytic productive osteoarthritis, with which enormous bony spurs are observed on the spinal joints and other joints without excessive loss of range.

One of the recent great advances of enzymatic chemistry is the elucidation of hormone (endocrine) modulation of body chemistry. Selye,[9] Albright,[3] Reifenstein,[10] Kendall,[11] and Bauer[12] and a host of others have paved the way for the use of these substances in aiding control of collagenous tissue diseases. A number of synthetic and natural "steroids" have been shown to have diversified effects on metabolism of the fibrous tissues. Certain steroids, notably androgens (testosterone, progesterone, etc.), have to do with a positive nitrogen balance, the development and preservation of muscle fibers and hyaline joint cartilage, the maintenance of mineralization of bone (spine in cases of senile osteoporosis) and the prevention of vertebral epiphysitis. Other steroids have to do with the prevention and correction of such conditions as rheumatoid arthritis, gouty arthritis and other diseases characterized by excessive production of fibrous tissue and excessive contracture thereof. Rheumatoid arthritis, subject to remissions during the gravid metabolic state, only to return in full-blown exacerbation after parturition, provides a fine demonstration of the altering of a collagenous tissue disease by means of changing the metabolic balance. The incidence of diseases with alterations of metabolic balance secondary to changes in the weather have been widely investigated by William F. Petersen and others. It is interesting to note that there is a marked increase in "stiffness, aches and pain" among the populace on days before it storms, as is shown by a decided increase in the number of admissions to orthopedic and arthritic clinics.

The remarkable celerity with which the contracture of the periarticular fibrous tissue associated with rheumatoid arthritis frequently tends to melt away, and mobility to return, after the use of adrenal cortical steroids (synthetic, natural or as instigated by ACTH) demonstrates conclusively the delicate sensitivity of balance between contraction and relaxation of the fibrous tissue. As yet, the "steroids" can be measured only roughly by laboratory tests. New ones are constantly being discovered, and it is often hard to determine whether they are natural steroids or artifacts of chemical separation. Tests, such as the Thorn test[13] for the eosinophilic blood count, give accurate results but do not indicate exactly which of the various adrenal cortical steroids is responsible. The sodium chloride-potassium ratio in the blood is an index, but for just which steroid is not known. Excretion contents in the urine measure the steroid urinary output, but little is yet known as to which tissue metabolism steroid they measure.

The sequence of "the chain of command" in steroid metabolism is important and is gradually being elucidated. Apparently the sensory (external and internal) system feeds into the brain the stimuli, which are then transmitted to the hypothalmus; this, in turn, exercises a control over the pituitary, which, in its own turn, elaborates the specific glandular trophins (thyrotrophin, adrenal cortical trophin, gonadotrophin, etc.), which circulate via the blood stream to the particular glands and stimulate their endocrine production. These endocrines then circulate to all the tissues of the body, exercising their particular share of control of the enzymatic chemical reactions of metabolism.

Colchicine,[14a] for many years a standard remedy for gouty arthritis and often taken as wine of colchium, has recently taken on an extensive and exciting new significance. Enzymatic chemical research on fibrous tissue has made wide use not only of fibroblast cultures but of the spindle fibers formed in the metaphase of mitotic cell division. The effect of colchicine[14b] in inhibiting the fibrous contractile mechanism of the spindle is startling. When this effect is present, the synergistic effect of the steroid hormones is pronounced, although they themselves do not have this power. Other substances that produce this colchicine-like effect are now known, although they are not nearly so effective, and it is postulated that the body normally elaborates, or at least utilizes, substances to provide this colchicinoid mediative effect. It has been shown that adenosine-triphosphuric acid (ATP[14b]) is probably indispensable to fibrous contraction of the spindle fiber, and that the colchicine acts on the cell by modifying this mechanism.[15] The role of steroid activity in this direction has been extensively studied by Katzberg of the University of Oklahoma Medical School.

The use of colchicine to enhance the mediative effect in steroid therapy for the correction of fibrous contractures in cases of collagenous tissue disease has wide application, and, in many instances, the patient can be "trailed off" steroid therapy to the maintenance dose of colchicine (daily divided doses in amounts just short of producing gastrointestinal symptoms) without fear of recurrence of contracture, so long as this maintenance dose is continued. Return of aching in joints and "stiffness" observed within a couple of months after the maintenance dose is interrupted are frequent. At the Billig Clinic there are constantly returning patients, not seen for several years, who had decided, against advice, that they were "well" and the maintenance dose of colchicine was no longer necessary and then had noticed, within two months after discontinuing it, a recurrence of symptoms. Such patients rarely need a second "lesion." Certain of the synthetic steroids seem to cause pronounced further depression of the patient's own production of adrenal cortical steroids so that, upon discontinuance of the synthetic steroids (because of other side effects; Cushing's, etc.), there are recurrent symptoms more severe than the original ones. The administration of ACTH and testosterone to these patients, as a means of stimulating recovery of the adrenal cortex, is indicated but is not always especially successful. These patients tend to present a fixed aggravation-intolerance psychic attitude that does not clear up.

As has been pointed out, the fundamental tendency of fibrous tissue is to contract, shorten and form contractures reducing the range of motion unless this tendency is opposed. The cat remains agile from frequent stretching. Volkman's ischemic contracture, contraction of the gastrocnemius and soleus muscles, "shortening" of the achilles tendon and the scalenus anticus syndrome are examples of pronounced shortening of muscles due to fibrocytic contracture of the fibrous elements of the muscle to include muscle septums, sarcolemma, etc. This contracture causes a secondary concomitant passive shortening of the contractile muscle fibers and prevents the latter from extending to their normal relaxed length, hence limiting their power. Should length be regained by means of tendon lengthening, restoration of power does not accompany it. The optimal method of correction of such contractures is to stretch repetitively, accumulatively and progressively[16] the contracted fibrous tissue within the muscle by distention traction sufficient at each treatment, to make some progress toward further loosening, but not at any one stretch past that point, lest a tear be produced. This technic of stretching far enough to loosen but not far enough to tear is the secret of successful mobilization therapy.[17a] If the stretching is less in extent it irritates the fibrous tissue, does not loosen and results in further contracture due to the contractile response of the fibrous tissue to the irritation. In brief, the stretching technic entails carrying the stretch not just to the point of limitation but past this point sufficiently to gain a loosening; yet it must not be carried past the latter point to that of tearing. Persons whose occupations call for excessive loosening find that persistent stretchings result in truly remarkable mobility. Into this class fall acrobats, tumblers, ballet dancers and track stars (hurdlers). Sedentary workers tend, for lack of stretching, to contract into the sedentary position, so that the pelvis and the lumbar portion of the spine are in fixed contraction ("anterior tilt") at the hips. When such a person attempts to stand erect, he winds up with lumbar lordosis (hollow back), since the pelvis cannot tilt backward even so far as to neutral. The initial stage of acute poliomyelitis is characterized by an intense general contraction shortening of the fibrous tissue, so that the patient often becomes as "stiff as a board." Persistent application of hot moist packs will aid in the loosening, but actually the contraction must be stretched out mechanically in order to restore mobility, else fixed permanent contractures, followed by deformity, will develop. When confronted with a contracture past the point of release by stretching and metabolic steroid aid, one must resort to surgical severance, e.g., Soutter anterior pelvic stripping for flexion abduction contracture of the hip; Ober fasciotomy and iliotibial band section; cervical fascia and muscle sheath section for the scalenus anticus syndrome and the "cervical rib syndrome"; plantar fasciotomy and Steindler stripping for pes cavus; palmar fasciotomy by the Luck technic for Dupuytrens contracture; Heyman posterior *pelvic* stripping, etc.

Afferent and efferent nerve pathways, in their course between the spinal cord and their peripheral distribution, pass through and by the various fascial and ligamentous planes forming the compartmentation of the body. If the fascia tightens abnormally, which may occur as the result of many factors—chilling, inactivity, a fixed posture, immobilization, disease (e.g., poliomyelitis), steroid deficiency (rheumatoid arthritis, gouty joint irritation, and other collagenous tissue diseases); irritative strain (lifting, whiplash injury, etc.), or joint infection—the nerve pathways are constricted, causing abnormal stimulation of the involved nerves. In this manner signs and symptoms referable to the peripheral motor, sensory and autonomic nerves are produced and include such widely varying afflictions as dysmenorrhea,[18] spastic hammertoe,[19] Morton's neuralgia,[19] persistent "stone bruise" of the heel,[19] intercostal neuritis, head, neck and eye syndrome,[2a] brachial and lumbosacral plexus neuritis.[17] Gradual, accumulative loosening of the particular contracted fascial ramifications by means of specific repetitive active and passive stretchings will free the involved nerve pathways from their constrictive irritation and bring relief from the troublesome signs and symptoms.

SUMMARY

The anatomic, physiologic and biochemical aspects of collagenous tissue are reviewed in terms of the modern concept of "living tissue."

The "living tissue" response of collagenous tissue to the various common metabolic (endocrine), mechanical and disease states are outlined and correlated with the concomitant changes in bone, muscle and cartilage changes accompanying the various phases of the male and female life span from "insemination" to "dissemination."

Metabolic, mechanical and nutritional aids in insuring the success of orthopedic operative procedures by control of the collagenous tissue responses are offered.

ZUSAMMENFASSUNG

Es wird über die anatomischen, physiologischen und biochemischen Eigenschaften kollagenen Geweges im Sinne der modernen Auffassung von "lebendem Gewebe" berichtet.

Die Reaktion kollagenen Gewebes als "lebendes Gewebe" auf die verschiedenen gewöhnlichen Zustände des Stoffwechsels (innersekretorischer Art), mechanische Bedingungen und Krankheitszustände werden umrissen und zu den gleichzeitig vorhandenen Veränderungen im Knochen, Muskel und Knorpel in Beziehung gebracht, die die verschiedenen Stadien des Lebens des Mannes und der Frau kennzeichnen.

Es werden Hilfsmittel metabolischer, mechanischer und alimentärer Art in Vorschlag gebracht, die durch Regulierung der kollagenen Reaktionen zur Sicherung der Erfolge orthopädischer operativer Eingriffe beitragen sollen.

RÉSUMÉ

Les aspects anatomiques, physiologiques et biochemiques du tissu collagène sont passés en revue en fonction du concept moderne du "tissu vivant."

La réaction du "tissu vivant" du collagène aux différents états métaboliques, endocriniens, mécaniques et pathologiques est décrite et mise en corrélation avec les modifications concomitantes de l'os, du muscle et du cartilage, accompagnant les différentes phases de la vie mâle et femelle s'étendant de l' "insémination" à la "dissémination."

L'auteur propose des auxiliaires métaboliques, mécaniques et alimentaires en vue d'assurer le succès de procédés opératoires orthopédiques par le contrôle res réactions collagènes.

RIASSUNTO

Rassegna degli aspetti anatomici, fisiologici e biologici del collageno secondo il moderno concetto di "tessuto vivente."

Viene descritta la risposta di questo tessuto ai vari stimoli metabolici (endocrini), meccanici e morbosi, e i rapporti con le contemporanee modificazioni delle ossa, dei muscoli e della cartilagine.

Vengono suggeriti gli ausili metabolici, meccanici e nutritivi che possono contribuire al successo degli interventi ortopedici, attraverso il controllo dell'attività del collageno.

RESUMEN

Se revisan los aspectos anátomico, fisiológico y bioquímico del tejido colágeno de acuerdo con el concepto moderno de "tejido vivo."

La respuesta del tejido colágeno, como "tejido vivo" a los varios estados metabólicos comunes (endócrinos), mecánicos y patológicos se mencionan y correlacionan con los cambios concomitantes en hueso, músculo y cartílago que acompañan las varias fases de la vida del hombre y la mujer, desde la "inseminación" hasta la "diseminación."

Se dan ayudas metabólicas, mecánicas y nutricionales para asegurar el éxito de los procedimientos ortopédicos operatorios por control de las respuestas del colágeno.

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racture-Dislocation of the Talus with Posterior isplacement of the Body and Avascular Necrosis

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OME 17 cases of fracture-dislocation of the talus, a rather infrequent injury, have been reviewed in the hope hat some new light might be shed on the anagement of this most serious type of njury and complication. It must be emhasized that this article is a preliminary eport, presenting the authors' ideas conerning treatment in an attempt to imrove the results. Several cases will be resented in which these ideas have been arried out to justify their presentation t this time.

Anatomic Background: Ankle Mortise. —The talus is intra-articular. Three-ifths of the surface is covered with articlar cartilage, and the structure takes part n the formation of three joints: the ankle, he subtaloid joint and the mid-tarsal joints (talonavicular). The talus is a hinge joint, and only in extreme of dorsiflexion loes it fully occupy the ankle mortise.

In normal weight bearing relatively no force is transmitted from the heel or forefoot through the center of the talus to the enter of the ankle joint. Practically all of the force is taken up by the gripping action of the external fibular and medial tibial malleoli through the sides of the talar body by means of complex ligaments of the ankle joint.

Mode of Production of Injury (Anderson). — The accompanying illustration shows the third degree of a dorsiflexion injury which begins as follows:

1. The neck of the talus is impacted against the anterior edge of the lower end of the tibia, producing a vertical fracture of the neck of the talus.
2. Force is further transmitted from the neck of the talus to ligaments of the posterior part of the subtaloid joint, causing subluxation of the foot forward on the body of the talus and a posterior subtaloid dislocation.
3. The foot continues in dorsiflexion and supination. The displacement continues, and the medial surface of the tuberosity of the calcaneus comes to lie under the body of the talus. While in this position the sustentaculum tali of the calcaneus locks in front of the medial tubercle of the body of the talus. Rarely, pronation causes lateral and posterior displacement of the body.

When violence ceases and the foot is in plantar flexion, the locked body of the talus is displaced backward out of the tibiofibular mortise. It lies on the medial surface of the tubercalcanei, with the fractured surface directed laterally, the trigonal tubercle medially and the medial tubercle hooked behind the sustentaculum tali.

Avascular Necrosis.—It is interesting to note that, in this series, avascular necrosis was absent in all cases of fractur he

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neck of the talus, Grade 1 (of which we have personal knowledge of 10 cases), in which accurate reduction was obtained. This appears to agree with the observations of other authors.

In the presence of second-degree injury with subtaloid dislocation, various authors estimate the incidence of avascular necroses at an average of 50 per cent of cases, because of the addition of a destroyed interosseous ligament in that 50 per cent. With posterior displacement of the body of the talus in the third degree injury the incidence of avascular necrosis is 100 per cent, because the displaced body is entirely devoid of capsular and ligamentous attachments.

In our opinion avascular necrosis associated with injuries of the talus is not due to any particular peculiarity in the blood supply of the talus; the incidence is in direct proportion to the extent of damage to the bone, its ligamentous and capsular attachments and their blood supply, particularly in the interosseous ligament in the sinus tarsi and running deep to the medial malleolus. Pennal and Van Orman of Toronto, working independently on this problem, have kindly lent us some of their Kodachrome slides of dissections showing the important blood supply.

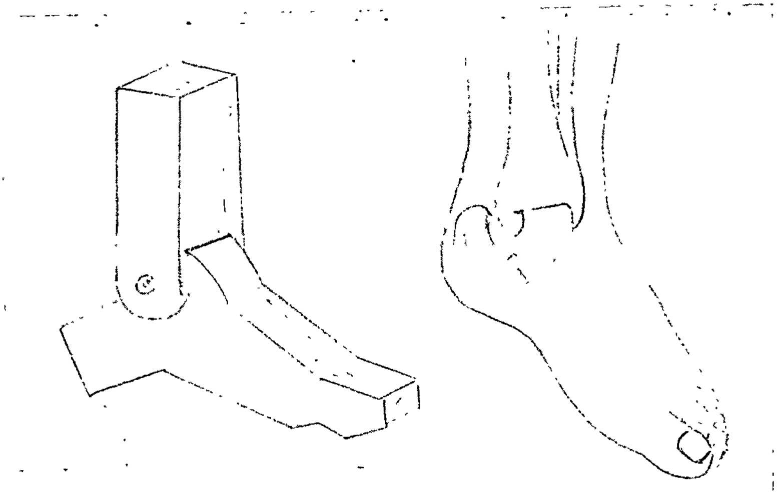
Complications in Treatment. — Treatment of this injury is complicated by the following factors:

1. Danger of sloughing of the skin over the displaced bone, with consequent infection or osteomyelitis.
2. Difficulty in replacing the displaced body of the talus in the tibiofibular mortise.
3. With fracture of the anterior margin of the lower end of the tibia or of the medial malleolus, the interposition of the soft tissue.
4. Inevitable avascular necrosis.
5. Later degenerative arthritic changes in the subtaloid and ankle joints.
6. In the past the frequency of early operative multiple fusions was also a factor.

Our series consists of 9 cases illustrating the aforementioned difficulties and showing the results of treatment.

TABLE 1.—*First Group of Cases*

Case No.	*Type*	*Months in Plaster*	*Weight Bearing, Mo.*	*Working After Injury, Mo.*	*Result*
1.	Incomplete reduction	9	15	19	Fair—pain
2.	Poor reduction; nonunion; screw	14	18	23+	Fair—pain
3.	Incomplete reduction; screw	12	15	18	Fair—pain
4.	Nonunion after fusion; second fusion	12	13	16	Fair+
5.	Complicated by fracture of lower end of tibia; early fusion of ankle and subtaloid joint; later, osteotomy and subtaloid fusion	21	21	28	Fair
6.	Complicated by fracture of malleolus; *early subtaloid fusion; later, ankle* fusion	14	24	28	Poor
7.	Fracture of medial malleolus; early double fusion	9	9	10	Good
8.	Early triple fusion	6	10	12+	Fair (too early)
9.	Early subtaloid fusion (6 mo.)	15	24	24	Fair+
	Average	13	15	20+	



Third degree of dorsoflexion injury (see text).

There was 1 "good case" (P.D. rating, 12 per cent) and 1 "poor case" (P.D. rating 25 per cent). Open reduction was required in all; avascular necrosis was present in all. In 3 cases the heads are still completely dead, with fusion. In the remainder revascularization is taking place, beginning from 12 to 24 months after the injury. It is our opinion that early fusion does not accelerate the rate of revascularization. In 3 "fair cases," in which pain persists, subtaloid arthrodesis may be required. The patients in 5 cases in which no ankle fusion was performed have good ankle joints.

In the second group of cases (Table 2) there was more severe injury, with comminution of the talus or loss of skin and infection (osteomyelitis). Excision of the talus was necessary in 4 cases.

In 4 cases, 1 fusion (tibial calcaneal) appears satisfactory. In 2 cases fusion will be required. In 1 case the status is not assessable.

These two groups of cases illustrate most of the complicating problems mentioned with reference to management of these cases. The end results, on the whole, are not good—in fact, extremely disappointing. How, then, is one to approach this serious problem to minimize or prevent complications?

Reduction is urgently necessary, immediately the fracture is seen, to prevent embarrassment of cutaneous circulation, infection and osteomyelitis.

Reduction must be accurate. Try closed reduction by manipulation *once*; do not aggravate the injury further by prolonged manipulation. Be prepared, if one attempt fails, to carry out an open reduction immediately. Do not prolong the injury by attempts at skeletal traction. Use a posteromedial incision; unlock [illegible] nes

TABLE 2.—*Second Group of Cases*

	Case	*Result*
1.	Excision + tibiocalcaneal fusion	Fair—too early to assess; now good
2.	Poor reduction—S.P. Pin + Sepsis; excision, no fusion	Too early to assess; still septic
3.	Excision of body; no fusion	Pain + + ; requires fusion
4.	Sepsis + osteomyelitis; excision, no fusion	Pain and shortening; requires fusion

TABLE 3.—*Immediate Reduction; Early Ambulation*

	Case	*Months in Plaster*	*Weight Bearing, Mo.*	*Return to Work, Mo.*	*Working*	*Result*
1.	Beange	7	7	11	1½ yr.	Good
2.	Gratton	8	12	24 (Malton)	3 yr.	Good (qualify)
3.	Russell	5	6	9	3½ yr.	Fair+
4.	Hendry	6	6	12	6 mo.	Fair+
		6½ (13)	7½ (15)	14 (20)		

a lever or skid between the sustentaculum tali and the talus, and push the body forward into the joint. Pay strict attention to the subtaloid joint, and insure its accurate apposition. Maintain accurate reduction with the foot in plantar flexion.

If the medial malleolus is fractured, reduction is much easier. Remove a periosteal flap from the malleolar fracture line, reduce the talar dislocation and fix the malleolar fragment.

If reduction is difficult, one can fracture the medial malleolus sufficiently to allow easier reduction of the body of the talus.

How Much Shall One be Influenced by the Onset of Avascular Necrosis?—For the past six years it has been our opinion that this fracture dislocation, once reduced, should be immobilized until there is roentgen evidence of bony union, with a narrow zone of revascularization beyond the fracture line. Because of the mechanics of the ankle joint, already mentioned, we hoped that at this time gradual assumption of weight bearing would not cause collapse or fragmentation of the dead body or materially increase the incidence of arthritic changes in adjacent joints. Early return to regular occupation has also been encouraged.

Following the principles here laid down, we now have 4 cases managed in such a manner as seems worth reporting.

All have good ankle joints. There is no collapse of the body. Two patients have subtaloid joint pain and may still require subtaloid fusion. All are working at their regular occupations. The patient with the poorest result has a 5 per cent disability rating. Revascularization is proceeding in all 4 cases from 9 to 12 months (instead of 12 to 24 months) from onset and is almost complete in 2 cases.

In following this whole group of cases over the past six years, we have noted the high incidence of subtaloid joint pain and arthritis and the necessity for frequent subtaloid fusion. Too few cases have been followed (Table 3) to justify saying that we have lessened the need for such a procedure by paying more attention to the subtaloid articulation in our reductions. At this point, however, one can hope that adherence to these primary principles, together with early ambulation, the fracture will unite solidly, the process of revascularization will not be harassed, good functioning ankle joints will be obtained (certainly in many cases). Subtaloid fusion, therefore, can be reserved for subsequent painful arthritic changes in the joint, replacing the common combined or triple fusions performed in past years unless other factors, e.g., fracture of the lower end of the tibia with ensuing arthritis, necessitate ankle fusion. If excision of the talus should be necessary, it would seem obvious that it should be combined with tibial calcaneal fusion early.

We hope that these observations will be accepted as a preliminary, provocative report. Too few cases have been followed under this regimen to be conclusive, but up to the time of writing they encourage us to continue with the principles of treatment as enumerated, possibly returning with a more comprehensive report in another five to ten years.

SUMMARY

Eighteen cases of fracture-dislocation of the talus, a rather infrequent injury, are being reviewed in the hope that some new light may be shed on the management of this serious injury and complication.

Early open operation and early ambulation (as soon as there is evidence of consolidation of the fracture site with an early zone of revascularization beyond the fracture line) are two of the important points in the management of this condition, since they reduce the period of disability. Anatomic studies of the blood supply of the talus are included, and evidence that early fusion of the ankle and subastragaloid joints does not accelerate the revascularization process is added. In certain cases, however, arthritis of the subastragaloid joint arthritis developed later, necessitating a subastragaloid fusion, but the ankle joints remained mobile. If excision of the talus is necessary it should be combined with tibial calcaneal fusion.

RESUMEN

18 Casos de fractura-lujación del calcáneo, accidente poco frecuente, se revisan con la esperanza de dar alguna luz en el manejo de este serio accidente y sus complicaciones.

Una operación abierta precoz y ambulación precoz (tan pronto coma haya evidencia de consolidación del punto de fractura con una temprana zona de revascularización más allá de la línea de fractura) son de los más importantes puntos en el manejo de esta condición, ya que reducen el período de incapacidad. Estudios anatómicos del suplemento sanguíneo del calcáneo están incluídos y se agrega la evidencia de que la fusión precoz de la articulación del talón y subastragalina no acelera el proceso de revascularización.

En ciertos casos sin embargo, se desarrolló una artritis de la articulación subastragalina—con fusión de dicha articulación, pero el talón permaneció móvil—Si la resección del calcáneo es necesaria, debe combinarse con fusión tibio calcánea.

ZUSAMMENFASSUNG

Es liegt eine Untersuchung von 18 Fällen von Bruch und Verrenkung des Fersenbeins vor. Der Verfasser hofft, neues Licht auf die Behandlung dieser ziemlich seltenen aber schweren Verletzung und ihrer Komplikationen werfen zu können.

Frühzeitiger chirurgischer Eingriff und frühzeitige Bewegung des Kranken (sobald sich eine Festigung der Bruchstelle und die Wiederherstellung des Blutkreislaufs in der Umgebung der Bruchlinie nachweisen lassen) sind zwei der wichtigsten Punkte in der Be

Verletzung, da sie zur Herabsetzung der Untauglichkeitsperiode führen. Die Arbeit umfasst anatomische Untersuchungen der Blutversorgung des Fersenbeins. Es wird darauf hingewiesen, dass eine frühzeitige Fusion des Fussgelenks und der Gelenke unterhalb des Sprungbeins die Wiederherstellung des Blutkreislaufs nicht beschleunigt. In manchen Fällen führte aber eine Arthritis der Gelenke unterhalb des Sprungbeins zu einer Fusion dieser Gelenke, während die Fussgelenke beweglich blieben. Wenn eine Entfernung des Sprungbeins notwendig ist, so sollte sie mit einer Fusion der Tibia mit dem Os calcis kombiniert werden.

RÉSUMÉ

Dix-huit cas de fracture-dislocation de l'astragale, lésion assez rare, sont analysés dans l'espoir de faire la lumière sur le traitement de ces cas graves et de leurs complications.

L'opération ouverte et précoce, ainsi que la marche précoce (dès qu'il y a évidence de consolidation avec une zone de revascularisation au-delà de la ligne de fracture) sont deux des facteurs les plus importants du traitement; la durée de l'incapacité s'en trouve réduite.

Cet exposé comprend aussi une étude anatomique de la vascularisation sanguine de l'astragale, et l'auteur apporte la preuve que la "fusion" précoce de la cheville et de l'articulation subastragalienne n'accélère pas le processus de revascularisation. Dans certains cas cependant, une arthrite ultérieure de l'articulation subastragalienne s'est développée, mais l'articulation de la cheville est restée mobile. Si l'excision de l'astragale est nécessaire, celle-ci devrait être combinée avec une "fusion" tibio-calcanéenne.

SUMARIO

São revistos dezoito casos de fratura-luxação do tarso, traumatismo muito raro, na esperança de que novas luzes se lancem para esclarecer a plano de tratamento dessa ocorrencia grave.

A operação precoce e a deambulação (tão logo haja evidência de consolidação da fratura com uma zona de revascularização inicial em torno a linha de fratura) são os dois pontos principais no tratamento dessas lesões por isso que reduzem o periodo de incapacidade.

Os estudos anatomicos da circulação sanguinea do tarso são apresentados. Em alguns casos pode ocorrer uma fusão subastragaliana por artrite (dessa articulação) permanecendo movel a articulação tibio-tarsica. Se a excisão do talus for necessária ela deve ser combinada com a artrodese tibio-calcânea.

* * *

He is happy whose circumstances suit his temper; but he is more excellent who can suit his temper to any circumstances.

—*Hume*

At twenty years of age the will reigns; at thirty, the wit; and at forty, the judgment.

—*Gratian*

Otorhinolaryngologic Surgery

Improvement of Hearing in Otosclerotic Patients by Mobilization of the Stapes Without Incision

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THE purpose of this paper is to present a method of mobilizing the stapes that does not require an incision and opening of the middle ear cavity.

The idea of attacking fixation of the stapes footplate by mechanical manipulation at the tympanic membrane is not new. In 1884 Lucae[1] designed a rod, the distal end of which was hollowed out in the shape of a cone. This was placed against the short process of the malleus. The rod was attached to a spring mechanism, which, when released, caused it to deliver a thrust that traveled from the short process of the malleus through the ossicular chain. Lucae noted that "early cases" yielded best results. His procedure did not find favor, since it caused considerable pain.

Some years later, Bishop[2] employed a double-pronged instrument that engaged the handle of the malleus. The malleus was manipulated until "it is felt to move or until the adhesions present are felt to give way." Perhaps the most ingenious technic was that practiced by Large.[3] He used a vibrating rod energized by a two-volt motor. The end of the rod was placed upon the short process of the malleus. The motor delivered 500 to 1,500 revolutions per minute. He claimed good results. These technics did not win lasting approval.

Ever since Celsus,[4] at the beginning of the Christian era, introduced perforation and incision of the drum membrane, there has been a succession of therapeutic and surgical suggestions for the treatment of the hard of hearing. An accurate review of the surgical treatment of deafness could begin with perforation of the drum membrane by Sir Astley Cooper[5] in 1800. In Cooper's case the eustachian tube was obstructed; his patient's hearing was improved by the perforation. As a result, indiscriminate openings of drum membranes were performed throughout Europe for many years thereafter. Because of early closure of the perforations, the entire membrane was removed. Some surgeons included the bony sulcus. When hearing was not improved by these methods, they removed one or more of the ossicles, on the basis of the assumption that their joints were ankylosed.

That deafness can result from fixation of the stapes was recognized by Valsalva[6] as far back as 1704. It was principally as a result of the work of Toynbee[7] between 1841 and 1860 that it became known that fixation of the stapedial footplate occurred in a great majority of cases of deafness. This led to attempts at removal of the stapes and later to its mobiliza Ke

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sel[8] was the first to try unlocking the stapes. Miot[9] was perhaps the most active advocate of this procedure. Good results were claimed by many otologists of that period.

It would appear from the literature[10] that failure predominated in every type of operation performed. This explains the numerous suggestions and new technics that were introduced from time to time. It is significant that attention to the stapes seems to have disappeared at the beginning of the present century. When the results of extraction and mobilization of the stapes proved unsatisfactory, several otologists, notably Passow,[11] Barany,[12] Holmgren[13] and, later, Sourdille[14] sought a substitute for the obstructed oval window. Their efforts culminated in the present-day fenestration operation so diligently perfected by Lempert [15] and his fellow otologists.

In addition to the purely surgical procedures mentioned, many things were done to the patient who was hard of hearing. These included various forms of percussion and vibration directed at the short process of the malleus; exposure to vapors; pneumomassage; electromassage; inflation by catheter with air, steam or medicinal vapors; injection of various fluids through the eustachian catheter; bougies; electricity; ear trumpets; roentgen rays, and the Siegel otoscope.

Recently Rosen[16] reintroduced mobilization of the stapes. His technic or a similar one is employed by many otologists.[17] Some have changed the manipulative part of the operation. House[18] applies a modified Hollenbeck pneumatic hammer to the footplate; Goodhill[19] uses a microvibrator which is applied to the lenticular process of the incus; Basek and Fowler[20] cut through the anterior crus and break through the footplate adjacent to the otosclerotic focus by pressure with a blunted needle. No doubt there are other technics, or will be. This variety of technics would indicate that the condition under attack is not sufficiently well understood or well delineated to permit the establishment of a standardized procedure like those employed for other surgical conditions.

Mobilization of the stapes is for selected cases; it cannot be used successfully in all. This procedure is not for the advanced stage of the disease, in which atrophy of structures is present, nerve degeneration exists and otosclerotic foci are known to be located elsewhere. The other sites of predilection for this disease are well known and should be kept in mind. When lesions exist within the vestibule, at the round window and the internal auditory meatus, the disease is much too far advanced for these procedures. Nor should one overlook the fact that a latent focus may be present and may advance sufficiently in a brief space of time to interfere with a lasting result.[21] It would appear that fenestration offers a greater likelihood of success in advanced cases of involvement of the footplate.

All the technics have the same objective: to detach the remaining healthy footplate and anterior crus from the diseased tissue that is responsible for fixing the footplate and to restore mobility at the oval window (Fig. 1).

The lesions one encounters when attempting to mobilize the footplate of the stapes can be divided into three groups: first, a well-localized focus, anteriorly placed, that fixes the footplate for one-third or one-fourth of its length and involves the lower end of the crus.[22] This is the ideal lesion, because after the focus is severed from the normal crus and footplate there remains a good functioning stapes-footplate unit (Fig. 1*A*). Any lesion of greater extent immediately raises the question of whether a satisfactory result can be obtained. The second type (Fig. 1 *B*), consists of a focus that covers three-fourths or more of the footplate, beginning at its anterior extremity. Even though the focus can be severed from the surrounding healthy structures, there will not be sufficient normal footplate left for adequate function. The third type consists of involvement of the entire footplate area. In such cases the disease has usually penetrated into the vestibule (Fig. 1*C*). This is not amenable to any kind of treatment; a good result is not possible.

It would appear that any reasonable method of attack upon the stapediovestibular region would yield the same result in a given case, because the break is bound to come at the point of least resistance. The fracture of the crura so frequently mentioned is simply severance of the crura from the focus involving the footplate. The basis for this is the well known law that when two structures are joined together, the substance of each by itself (the bone of the footplate and crus, and the spongiose bone of the focus) is stronger than the point of contact between them.

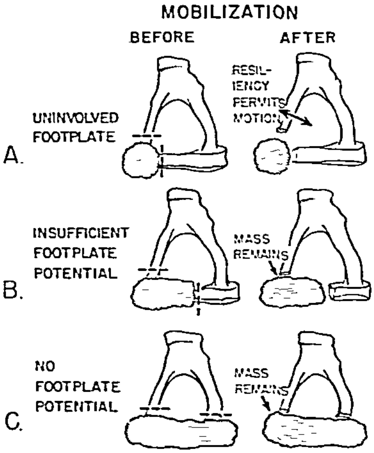

Fig. 1.—Three types of otosclerotic foci. *A*, ideal for employment of technic described; *B*, questionable to completely unsatisfactory; *C*, completely unsatisfactory.

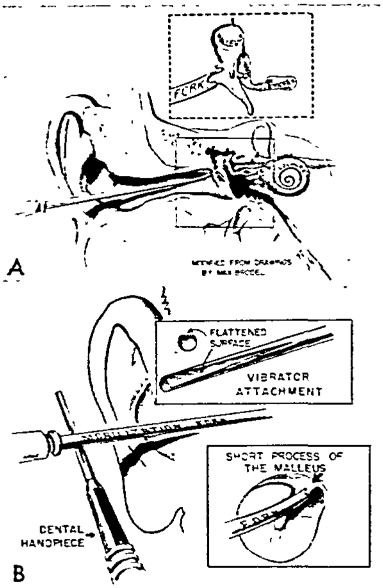
FORK
A
MODIFIED FROM DRAWINGS BY MAX BROEDEL
FLATTENED SURFACE
VIBRATOR ATTACHMENT
SHORT PROCESS OF THE MALLEUS
FORK
DENTAL HANDPIECE
B

Fig. 2.—*A*, sketch showing relations of aural structures (frontal view) and placement of forked instrument upon short process of malleus. *B*, rotating flattened rod in contact with shaft of forked instrument to generate vibrations.

If what has just been said is true, it follows that the simpler and less involved the procedure, the better. A procedure of this kind was described in a recent paper.[23] It consists of the placement of a forked instrument firmly over the previously exposed incudostapedial joint. A rod flattened distally 0.014 inch, revolving at 9,000 revolutions per minute, is then brought in contact with the shaft of the fork. The vibrations so generated are sufficient to mobilize the stapes in selected cases.

It was reasoned that if vibrations originating at the incudostapedial articulation could be transmitted to the stapedial footplate, similar vibrations might be started from the short process of the malleus. This would not only eliminate the necessity of making an incision, but would prevent all the complications that attend the present-day mobilization procedure; it would also eliminate postoperative pain and the necessity of packing.

The complications of currently used mobilization technics may be listed as follows: incudostapedial disarticulation or dislocation, hemorrhage, perforation, infection, external otitis, injury or severance of the chorda tympani nerve, injury to the facial nerve and serous labrynthitis. With the new technic, the difficulties, dangers and complications encountered during mobilization by way of the middle ear are eliminated. In addition, this procedure may be of advantage in those cases in which the ossicles are affected by adhesive processes resulting from previous inflammatory processes.

The technic used is as follows: After preliminary irrigation with ½ ounce of a 1:1,000 aqueous zephirin solution, 5 cc. of 1 per cent solution of procaine hydrochloride containing 12 minims to the ounce of epinephrin hydrochloride in 1:1,000 solution is injected into the region of the chondroosseous juncture of the ear canal, at a point corresponding with the center of the posterior canal wall. After anesthesia has been established, a forked instrument is placed upon the short process of the malleus. The fork is held firmly but gently in position (Fig. 2*A*). It is not necessary to exert any appreciable pressure to maintain the fork in position upon the short process of the malleus. My experiments on fresh cadavers disclosed that this process could withstand pressure equivalent to 75 Gm. The malleus-incus joint capsule may rupture and the malleus become dislodged if pressure beyond this weight equivalent is applied. With the fork so placed, a flattened rod, rotating at 9,000 revolutions per minute is brought into contact with the shaft of the forked instrument just beyond the ear speculum (Fig. 2*B*). This generates vibrations, and these are transmitted from the fork through the ossicular chain and the stapedial footplate. If the lesion is as shown in Fig. 1*A*, a good result can be expected; if as pictured in *B* or *C*, this is not likely. The accompanying audiogram (Fig. 3) is that of a woman 31 years old who had progressive deafness for three years. Her left ear was subjected to this operation, and her hearing was restored to a good normal level.

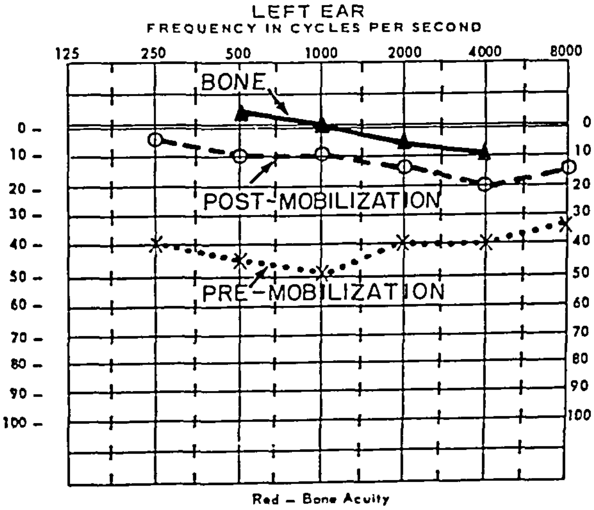

Fig. 3.—Audiogram of patient, a woman aged 31, showing hearing level before and after mobilization.

Requirements for Operation.—The patient may sit up or lie down. A headlight, a headmirror or an otoscope for suitable illumination; an ear speculum; a forked rod to fit over the short process of the malleus, and a rod flattened 0.0030 to 0.035 inch that can be fitted into a dental handpiece connected with a dental apparatus capable of producing 9,000 revolutions per minute, comprise the necessary equipment.

There are practically no complications. In some patients there is transient dizziness. In some cases the forked instrument may make contact with the drum membrane adjacent to the short process and cause some degree of trauma. Hemorrhage and swelling always follow the use of this technic, but the membrane returns to normal in seven to fourteen days.

The number of cases in which this method has been applied are too few at present to justify analysis. At a future date, when a sufficient number of cases is available, an analysis of results will be reported.

It should be emphasized that when the trans-ossicular vibratory technic does not yield results, the middle ear cavity is exposed in the usual manner and vibrations applied at the incudostapedial articulation, and the footplate as indicated.

SUMMARY

The author describes a technic of mobilization of the stapes without incision, based on the idea of attacking fixation of the stapedial footplate by mechanical manipulation at the tympanic membrane. Complications are minimal and certain dangers of the incisional procedure are eliminated. The method has not yet been used in a sufficient number of cases for a definitive report, but thus far the results seem promising.

ZUSAMMENFASSUNG

Der Verfasser beschreibt eine Technik der Mobilisierung des Steigbügels ohne Einschnitt. Das Verfahren beruht auf dem Gedanken, die Fixierung der Fussplatte des Steigbügels durch mechanische Manipulation am Trommelfell anzugreifen. Die Komplikationen sind äusserst geringfügig, und gewisse dem Einschnittverfahren anhaftende Gefahren werden ausgeschaltet. Die Anzahl ber bisher mit der Methode des Verfassers behandelten Fälle reicht noch nicht für einen abschliessenden Bericht aus. Die bisherigen Ergebnisse scheinen jedoch ermutigend zu sein.

RIASSUNTO

L'autore descrive una tecnica di mobilizzazione delle staffe senza incisione, basandosi sull'idea di fissare la base delle staffe manipolando meccanicamente la membrana del timpano. Minime sono le complicazione e, inoltre, viene eliminato il pericolo derivante dalla incisione. Il metodo non è stato finora usato in un numero tale di casi da poterne fare una relazione completa, ma i risultati fin qui ottenuti si dimostrano ben promettenti.

RESUMEN

El autor describe una técnica de movilización del estribo sin incisión, basado en la idea de atacar la fijeza del pie del estribo por manipulación mecánica en la membrana timpánica. Las complicaciones son mínimas y los peligros del procedimiento con incisión son eliminados. El método no ha sido usado aún en un número suficiente de casos para dar un reporte definitivo, pero hasta la fecha los resultados son prometedores.

RÉSUMÉ

L'auteur décrit une technique de mobilisation des étriers sans incision, basée sur la fixation de la lame de l'étrier par une manipulation mécanique de la membrane tympanale. Il réussit ainsi à limiter les complications et à éviter certains dangers de la méthode sanglante. Cette technique n'a pas été utilisée dans un nombre de cas suffisants pour permettre des conclusions définitives, mais ses résultats semblent prometteurs.

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A medical education must furnish not only the basic core of knowledge without which the title 'doctor' cannot be honourably borne, but an abundant, vivid, and practical experience in the use of scientific method. Of the two, the latter has the greater value, since it is the enduring instrument whereby new knowledge can be tested. It is the means of continued healthy growth that assures that the ageing physician's practice will not remain for ever that of his first indoctrination.

—*Liebow*

Surgical Treatment of Diseases of the Parotid Gland

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THERE are three large categories of disease of the parotid gland that may require surgical intervention, namely, inflammatory diseases, tumor and trauma. For the purpose of this article, inflammatory diseases and injuries will be described briefly and the treatment of choice indicated, while the treatment of benign and malignant tumors of the parotid gland will be discussed in some detail.

Some of the inflammatory diseases of the parotid that occasionally require operation are complications of mumps, obstruction of the parotid duct by calculi, acute parotitis and secondary involvement of the gland in tuberculosis.

The most common disease of the parotid gland is mumps. Mumps in itself does not require surgical treatment, but its complications occasionally produce conditions that need surgical treatment, as the following case illustrates.

REPORT OF CASES

CASE 1.—A 10-year-old boy had mumps several weeks prior to his presentation at the clinic. He complained of swelling of the side of the face, with pain. When pressure was applied over the swelling, which was in the parotid region, thick yellowish pus could be expressed from Stensen's duct. This was treated by dilation of the ducts and application of hot wet packs at home. Culture and sensitivity tests revealed that the organism was a staphylococcus, sensitive to penicillin and several other antibiotics. Penicillin was given, but the condition continued. After about two weeks' treatment the abscess area closed off and no longer was connected to the duct system. At this time incisional drainage was performed, and the patient made an uneventful recovery.

A second disease of the parotid gland that requires operation is obstruction of the parotid duct, or Stensen's duct, by calculi or inflammation. Obstruction of the gland's secretions may produce an inflammatory reaction and swelling. Secondary infection may result, with bacteria traveling up the duct and producing acute or chronic parotitis; also, the infection can be brought in by the blood stream.

CASE 2.—A 42-year-old man had a considerable swelling of the right side of the face, in the parotid region, of three days' duration. He was in extreme pain and was unable to eat, since any movement of the jaw increased the pain. Examination revealed a hard white mass at the orifice of Stensen's duct. The orifice was dilated and incised, and two stones, measuring 4 by 3 mm., were delivered. This was followed by copious drainage of thick yellow pus. The patient made an uneventful recovery and has had no further trouble.

CASE 3.—A 42-year-old Negro housewife was admitted to the hospital complaining of recurrent swelling in the left parotid region for the past eighteen years. During the past six months she had had constant swelling, with persistent drainage of thick yellowish material from Stensen's duct, considerable pain and a disagreeable taste in the mouth at all times. Examination revealed a pronounced swelling in the left parotid region, with drainage of thick yellowish pus from the left Stensen's duct when pressure was applied over the area. Exploration of the duct by means of a metal probe revealed it to be dilated. There were no foreign bodies or stones. Roentgen

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examination revealed no stones in the region of the gland. There was no palpable circumscribed mass, but definite diffuse enlargement of the entire gland was observed. Since the condition had existed for eighteen years and was giving the patient great discomfort, it was decided to remove the gland *in toto*. This was done, and the seventh nerve was preserved. The patient made an uneventful recovery. The pathologic diagnosis was chronic fibrosis and inflammation of the parotid gland. It was noted that Stensen's duct was much enlarged, measuring 8 mm. in diameter.

The next type of inflammatory involvement of the parotid gland is the so-called surgical parotitis. This disease is brought about by a generalized lowering of resistance in the patient, particularly lack of secretion during a period of dehydration. This disease has become rare, but it was formerly observed postoperatively in patients who had undergone a long period of dehydration before they were able to take fluids by mouth. With modern fluid therapy, surgical parotitis is becoming an unusual disease. One does encounter it occasionally, however, as in Case 4.

CASE 4.—An 82-year-old white man was admitted to the hospital with an intestinal obstruction. He was deyhdrated, owing to the fact that he had been unable to take fluids for about thirty-six hours. He was given emergency treatment by the department of general surgery after a short preoperative preparation. On the second postoperative day a massive swelling developed over the right parotid region, and the temperature was 104 F. Incisional drainage of the parotid region was performed. A large amount of pus was evacuated. The patient was then treated with hot wet packs, and the condition cleared rapidly.

Surgical measures are sometimes required for involvement of the parotid gland in tuberculosis. This is a rare disease in some parts of the United States, but where tuberculosis is prevalent involvement of the parotid gland is quite common. It is usually associated either with a bovine type of tuberculosis, with nodes in the neck, or with pulmonary tuberculosis in which there is secondary involvement of the glands. This disease is treated surgically by a resection of the involved areas.

CASE 5.—A 34-year-old Negress was admitted to the hospital with a swelling that had appeared suddenly in the right parotid region. Some pain was associated with the swelling; the pain was not increased on eating, however, and the swelling was only slightly tender to palpation. A thick yellowish secretion could be expressed from Stensen's duct.

This patient had active pulmonary tuberculosis and was being treated by the medical department. The parotid gland was excised, and the pathologic diagnosis was tuberculosis of the parotid gland. The wound healed well, and there was no further involvement of the area.

The location of the parotid gland makes it susceptible to injury when the side of the face is lacerated during trauma. If only the gland substance and not the main duct system is opened, formation of a salivary cyst may form in the wound after healing. These cysts usually require nothing more than drainage for a short time; they heal of their own accord.

When Stensen's duct is involved and a fistula develops, however, it is usually necessary either to obstruct the flow of saliva or to divert this flow to the inside of the mouth. The flow of saliva can be obstructed (a) by closing the fistula and causing degeneration of the gland or (b) by anastomosing the duct. In this latter operation the proximal and distal portions of the duct are joined. An incision is made over the fistulous area; a polyethylene tube is threaded through the proximal end of the duct and down through the distal end, and the two ends are anastomosed over the tube. The tube is allowed to remain in place for ten days to two weeks. If it is necessary to divert the flow of saliva to the inside of the oral cavity, the fistulous track that was on the skin surface is now used as the orifice of the gland on the inside of the mouth.

Tumors of the parotid gland can be divided into malignant and benign. The most common is the mixed cell tumor which is generally classified as benign. In my opinion, however, all mixed cell tumors are potentially malignant. In this article the malignant tumors will not be broken down into the various small classifications but will be discussed only as malignant mixed cell tumors and muco-epidermoid tumors. The benign tumors will be discussed rather briefly.

CASE 6.—A 35-year-old Negress presented herself with a large tumor (about 4 cm. in diameter) below the lobe of the right ear. It was freely movable and not attached to the surrounding structures. It appeared to be external to the mandible. The tumor was removed, together with a wide margin of normal gland. It was well encapsulated. The pathologist's diagnosis was benign mixed cell tumor of the parotid gland. The patient made an uneventful recovery and at the time of writing, ten years after the operation, has had no recurrence.

The dissection by which these benign tumors are removed requires care, since it is important to preserve the facial nerve and to avoid unnecessary damage to the surrounding structures. If the tumor is located in the superficial portion of the gland, it is usually simple to make an incision of the Esmarch type, reflect the skin flap and remove the entire superficial lobe without disturbing any branches of the facial nerve or the duct of the gland.

If the tumor is located in the deep lobe behind the ramus of the mandible, however, it is necessary first carefully to trace back the branches of the facial nerve under or through the superficial lobe and isolate the entire nerve. When the nerve has been isolated so that it can be protected, the tumor is removed, with a wide margin of normal tissue. If, in removing the tumor, it appears that the duct system has been damaged to such an extent that the postoperative course will be complicated, it is often better to remove the entire gland.

All such tumors should be removed widely. At no time should a biopsy specimen be taken. If, however, at the time of operation the surgeon suspects that the tumor may be malignant, a frozen section should be done. A pathologic report of malignant tissue would indicate a block dissection, with removal of the entire mass in one piece (including the facial nerve if it is centered in the mass), the external carotid artery and all the surrounding tissues. Block dissection insures a much longer survival than does removal of the tumor piecemeal in an effort to save the surrounding structures.

CASE 7.—A 48-year-old white man was admitted to the hospital with a mass measuring about 3 inches (7.5 cm.) in diameter in the right parotid region. He stated that a small tumor had been present in the same region for about twenty years. The tumor had grown slowly and finally had become so large as to be troublesome. There was no pain and no weakness of the facial nerve. The tumor was freely movable and did not appear to be attached to the surrounding structures.

At operation it was noted that the tumor was well encapsulated. The entire gland was removed and the facial nerve preserved. There was no apparent infiltration into the surrounding tissues. The wound was closed and healed well. There was no facial paralysis, and the patient made a good recovery. The pathologic report described the growth as a malignant mixed cell tumor of the parotid gland, well encapsulated. The patient returned to work and was seen periodically for check-ups. Eighteen months after the operation it was noted that a small tumor had appeared on the upper lip, in the mid-line, measuring about 1 cm. in diameter and protruding from the skin. This was excised, and the pathologic diagnosis was anaplastic squamous cell carcinoma. Roentgenograms were taken of the skull at the time. These revealed several punched out areas in the calvaria, in the midline, measuring up to 1 cm. in diameter. The patient was readmitted for irradiation, and it was observed that there was some swelling in the region of the old right parotid scar. After a full course of therapy the patient was discharged to a nursing home, where he died one year later, or two and one-half years after the original operation. Autopsy revealed generalized carcinomatosis.

In Case 8 a wide block dissection was performed for malignant mixed cell tumor.

CASE 8.—A 72-year-old white woman was admitted to the hospital with a large swelling in the right parotid region, severe pain and paralysis of the seventh nerve. The tumor measured about 1½ inches (3.7 cm.) in diameter and was fixed to the surrounding structures. The patient stated that at about the age of 30 she had had a swelling in the right parotid region. At the age of 47 she underwent her first operation, at which time the tumor was removed. The pathologic diagnosis was benign mixed cell tumor. Eleven years later, at the age of 58, she had a recurrence of the tumor, which was again removed and diagnosed as benign mixed cell tumor. At the age of 67, five years before admission to this hospital, she had another recurrent tumor, which was removed. Again the diagnosis was benign mixed cell tumor. On the present admission the preoperative diagnosis was malignant tumor of the parotid gland, because of the rapid growth of the tumor, the pain and the facial paralysis. A wide block dissection was performed, with removal of the masseter muscle and the entire surrounding mass. The external carotid artery was ligated at the level of the posterior belly of the digastric muscle, and the posterior facial vein was also ligated at this point. The entire mass was then rotated upward. It was not necessary to section the mandible, as the mass lay superficial and posterior to it, with a small portion protruding deep but not behind the mandible. After the removal the area was drained with a Penrose drain for forty-eight hours. The wound healed well, and the patient made a good recovery. Pathologic examination, including a frozen section, revealed adenocarcinoma of the parotid gland. Two years and four months later the patient had an acute coronary attack that resulted in death, but at the time, to all appearances, she was tumor free.

I am not convinced that radical neck dissection must necessarily accompany the treatment of malignant tumors of the parotid. In my experience, most of these tumors have metastasized in a generalized way through the blood stream, rather than in the local area of the neck through the lymphatics. The individual case and its complications, however, must be given consideration.

In addition to the mixed cell tumor, the muco-epidermoid tumor of the parotid gland requires surgical treatment. Unlike the mixed cell tumor, which may be benign or malignant, the muco-epidermoid tumor is always malignant, although the malignancy may be of either low or high grade. This tumor characteristically recurs locally; it also metastasizes through the lymphatics rather than through the blood stream as in the case of the mixed cell tumor. The muco-epidermoid tumor can be detected when it is small. Nowadays it is often diagnosed early, since the public is urged to seek immediate care of abnormal masses and swellings. If the pathologic diagnosis is muco-epidermoid tumor, a wide excision should be performed and the tumor removed with a wide margin of normal tissue. The least that should be done is a lobectomy—in other words, removal of the superficial part of the gland, if that is the portion involved, or the deep portion, if that is involved. If the size or position of the tumor suggests that it extends into both the superficial and the deep portions of the gland, the entire gland should be removed. Whether or not a radical neck dissection should be done at this time is controversial. My own opinion is that there should be no set rule for treating this tumor, but that all aspects of the individual case should be considered. Certainly, if there are palpable nodes, or if the pathologist reports high grade malignancy, a radical neck dissection should be performed.

The following 2 cases illustrate the treatment employed when a diagnosis of muco-epidermoid tumor must be considered.

CASE 9.—A 38-year-old white man was admitted to the hospital with a mass in the right cheek, at the anterior border of the masseter muscle. The tumor was about 1.5 cm. in diameter. It was freely movable and not painful. The preoperative diagnosis was tumor in the accessory lobe of the parotid gland. An incision was made parallel to the duct and over the tumor. It was removed by excising the entire accessory lobe and dissecting it free from Stensen's duct. The pathologic diagnosis was muco-epidermoid carcinoma of the salivary gland. The wound healed well, and the patient has had no recurrences at the time of writing, five and one-half years after the operation.

CASE 10.—A 23-year-old white man was admitted to the hospital with a mass in the left parotid region, just below the lobe of the ear, in the region of an earlier surgical incision. The mass measured about 1 cm. in diameter. It was rather diffuse and was attached to the surrounding structures. A tumor had been removed from the area two years and four months earlier. The pathologic diagnosis at that time was muco-epidermoid carcinoma of the parotid gland. The entire left parotid gland was removed without injury to the seventh nerve. The mass was located in the superficial portion of the gland and appeared to be a scar formation rather than tumor tissue. A frozen section showed fibrous tissue and chronic inflammatory reaction of the parotid gland. Since there were no palpable nodes and no evidence of metastases, radical neck dissection was not performed. The wound healed well. Paresis of the lower part of the face appeared on the second postoperative day but cleared in about six weeks. The final pathologic diagnosis was chronic fibrosis of the parotid gland. No tumor has been observed on subsequent routine examinations, although the patient has been followed only for four months.

It must be remembered that there are other tumors involving the parotid gland that require surgical treatment. The other true parotid tumors are Warthin's tumor and oxyphilic adenoma. These are classified as benign tumors; nevertheless, they should be removed with a good margin of normal tissue. Tumors of any of the normal structures may also occur in the parotid region, such as hemangiomas, lymphangiomas, lipomas, fibromas, neuromas and tumors of the muscle tissue, and the diagnosis can be made only by removing the tumor and obtaining a histologic report. Metastasized tumors from other parts of the body also occur occasionally in the parotid region.

SUMMARY

There are three classes of parotid gland disease that require surgical treatment, namely, inflammatory disease, tumor and trauma. In the indivdual case, treatment ranging from simple drainage to wide block dissection, including radical neck dissection, may be necessary. Four types of inflammatory complications requiring surgical treatment are described: (1) complications of mumps; (2) obstruction of the parotid duct by calculi or inflammation; (3) acute parotitis, and (4) secondary involvement of the parotid gland in tuberculosis.

The discussion of tumors of the parotid gland includes (1) mixed cell tumors, both benign and malignant; (2) muco-epidermoid tumors, and (3) other benign tumors in the region of the parotid gland. (No attempt is made to break down the classifications of the malignant tumors of the parotid gland, except to separate the muco-epidermoid from the general classification.)

Injuries to the parotid region are discussed including injuries to the gland itself and to Stensen's duct.

CONCLUSIONS

Treatment of inflammatory diseases of the parotid gland requiring surgical intervention is accomplished by drainage, relief of obstruction or, in the case of tuberculosis with secondary involvement of the parotid gland, resection of the affected parts.

A fistula resulting from lacerations to the face and penetrating to S [illegible] ic is treated by closing the fistula and causing degeneration of the gland, by anastomosing the duct or by diverting the fistulous track to the inside of the oral cavity.

It is the opinion of the author that all mixed cell tumors are potentially malignant. Early complete removal of mixed cell tumors is therefore vital. At no time should a so-called biopsy specimen be taken of these tumors, but a frozen section may be helpful at the time of operation. If the pathologic report indicates malignancy, survival will be much longer if block dissection, rather than removal of the tumor piecemeal in an effort to save the surrounding structures, is performed.

Radical dissection of the neck does not necessarily accompany the treatment of malignant tumors of the parotid, since it is the experience of the author that most of these tumors metastasize in a general way through the blood stream, rather than in the local area through the cervical lymphatics.

The muco-epidermoid tumor, which is always malignant, should be treated by wide excision. Whether or not a radical neck dissection should be done is controversial, but if there are palpable nodes or the tumor is of a high grade of malignancy, radical neck dissection is indicated.

CONCLUSIONS

Le traitement des affections inflammatoires de la parotide nécessitant une intervention chirurgicale, consiste en drainage, suppression de l'obstruction ou, en cas de tuberculose avec envahissement secondaire de la parotide, résection de la partie atteinte.

L'auteur est d'avis que toutes les tumeurs à cellules mixtes sont potentiellement malignes. C'est pourquoi il estime vitale, dans ces cas, l'ablation totale précoce. Il ne faudrait jamais pratiquer de soi-disant biopsie, mais un fragment congelé peut être utile au moment de l'opération. Si le rapport pathologique indique une malignité, la durée de survie sera beaucoup plus longue si l'on pratique la dissection du bloc plutôt que l'ablation de toute la tumeur dans le but d'épargner les tissus environnants.

La dissection radicale du cou n'est pas indispensable dans le traitement des tumeurs malignes de la parotide, car d'après l'expérience de l'auteur la plupart de ces tumeurs font des métastases générales par le flot sanguin et non des métastases localisées par les lymphatiques cervicaux.

Les tumeurs muco-épidermoides, qui sont toujours malignes, devraient être traitées par une excision large.

Les fistules résultant d'une déchirure de la face et allant jusqu'au canal de Stensen, sont traitées par la fermeture de la fistule en provoquant la dégénérescence de la glande (anastomose du canal ou déviation du trajet fistuleux à l'intérieur de la cavité buccale).

CONCLUSIONES

El tratamiento de los enfermadadas inflamatorias de la glándula parótida que requieren intervención quirúrgica se logra por medio de drenaje, supresión de obstrucción ó, en caso de tuberculosis con invasión secundaria de la glándula parótida, resección de los partes afectadas. La opinión del autor es que todos los tumores de células mixtas son potencialmente malignos. La extirpación completa y precoz de los tumores de células mixtas es por lo tanto vital. Nunca se debe tomar el llamado espécimen para biopsia, pero un corte por congelación puede ser de ayuda al tiempo de la operación. Si el reporte patológico indica malignidad, la sobrevida será mucho mayor si se hace una disección en bloque que si se hace una extirpación local del tumor, en un afán de salvar las estructuras circundantes.

La disección radical de cuello no acompaña necesariamente el tratamiento de los tumores malignos de la parótida, ya que la experiencia del autor demuestra que la mayoría de estos tumores dan mas metástasis generales a través del torrente sanguíneo que locales a través de los linfáticos cervicales.

El tumor mucoepidermoide que es siempre maligno debe ser tratado por una excisión amplia. Es una controversia si debe ó no hacerse una disección radical de cuello, pero si hay ganglios palpables ó si el tumor es de alto grado de malignidad, la disección radical sí esta indicada.

Una fístula resultante de heridas de la cara penetrantes al conducto de Stensen se trata, cerrando la fístula y causando degeneración de la glándula, anastomosando el conducto ó haciendo una diversión del trayecto fistuloso al interior de la cavidad oral.

SCHLUSSFOLGERUNGEN

Die Behandlung chirurgischen Eingriff erfordernder entzündlicher Erkrankungen der Ohrspeicheldrüse erfolgt durch Drainierung, Behebung von Obstruktionen oder — in Fällen von Tuberkulose mit sekundärer Beteiligung der Ohrspeicheldrüse — durch Resektion der befallenen Teile.

Der Verfasser ist der Meinung, dass alle Mischgeschwülste potentiell bösartige Tumoren sind, und dass daher die radikale Entfernung dieser Geschwülste von lebenswichtiger Bedeutung ist. Niemals sollte eine sogenannte Probeexzision ausgeführt werden. Ein während der Operation vorgenommener Gefrierschnitt kann jedoch von Nutzen sein. Wenn der pathologische Bericht eine bösartige Geschwülst ergibt, kann man mit einer viel längeren Lebensdauer rechnen, wenn man eine Blockresektion ausführt, anstatt sich mit einer stückweisen Entfernung der Geschwulst zu begnügen mit dem Ziel, die umliegenden Gebilde zu schonen.

Es ist nicht unbedingt notwendig, die Operation von bösartigen Geschwülsten der Ohrspeicheldrüse durch eine radikale Resektion der Halslymphdrüsen zu ergänzen, da nach der Erfahrung des Verfassers diese Geschwülste meist auf dem Blutwege und nicht lokal über die Halslymphknoten metastasieren.

Die mukoepidermoide Geschwulst, die stets bösartig ist, sollte durch weite Resektion behandelt werden. Die Frage, ob hier eine radikale Resektion der Halslymphknoten vorgenommen werden soll oder nicht, lässt sich noch nicht einstimmig beantworten. Wenn jedoch tastbare Lymphknoten vorliegen oder die Geschwulst einen hohen Grad von Bösartigkeit aufweist, dann liegt die Indikation zur radikalen Halsdrüsenresektion vor.

Von Gesichtswunden mit Verletzung des Stensenschen Ganges herrührende Fisteln werden durch Schliessung der Fistel, was zur Degenerierung der Drüse führt, behandelt oder durch Anastomisierung des Ganges oder durch Ableitung des Fistelkanals in die Mundhöhle.

CONCLUSOES

O tratamento dos processos inflamatorios da parotida requerem tratamento cirúrgico com drenagem, desobstrução ou, em caso de tuberculose secundária, a ressecção das porções atingidas.

O A. acha que todos os tumores de celulas mixtas são potencialmente malignos. Considera vital a excisão de tais tumores. Desaconselha as bipsias como são feitas mas insiste que os exames de congelação podem ser uteis no momento da intervenção. Se o resultado da histo-patologia indica malignidade a sobrevida não será prolongada apenas pela excisão simples do tumor porem considera necessário que seja feita uma dissecção em monobloco, ating-

indo as estruturas vizinhas.

Não considera, em sua experiencia, a necessidade de praticar os esvasiamentos cervicais nos casos de tumores da parotida porque a maioria desses tumores se propagam por via sanguinea e não por via linfática local.

O tumor muco-epidermóide, que é sempre maligno, deve ser tratado por excisão ampla. Embora a dissecção radical do pescoço seja discutivel, se existirem ganglios palpaveis, ela deve ser praticada bem como nos casos de tumores com alto grau de malignidade.

A fístula resultante de lesão da pele da face ou do canal de Stensen é tratada pelo fechamento com metodos de degeneração da parótida, anastomosando o canal ou derivando-o para o interior da cavidade oral.

CONCLUSIONI

La cura delle lesioni infiammatorie della parotide consiste nel drenaggio, nella rimozione dell'ostruzione e—nei casi di tubercolosi con interessamento secondario della ghiandola—nell'asportazione della parte malata.

L'autore è d'avviso che tutti i tumori misti siano potenzialmente maligni e che pertanto sia necessaria la loro asportazione completa. Non si deve mai fare il cosidetto prelievo bioptico; se mai sarà di aiuto un esame al congelatore durante l'intervento. Se il quadro istologico dimostra la malignità della lesione, si potrà avere una più lunga sopravvivenza con l'asportazione in blocco piuttosto che con una resezione parziale nel tentativo di risparmiare le strutture circostanti.

La dissezione radicale del collo non è necessaria, dacchè è opionione dell'autore che questi tumori generalizzino per via ematogena piuttosto che per diffusione locale linfatica.

Il tumore mocoepidermoide, che è sempre maligno, deve essere trattato con un'ampia asportazione. E' discutibile se si debba oppure no eseguire la dissezione del collo, ma questa è indicata se vi siano nodi palpabili o se il tumore dimostra un alto grado di malignità.

Le fistole del dotto di Stensen possono essere trattate mediante chiusura del tramite, a cui segue la degenerazione della ghiandola, con l'anastomosi del dotto o con la deviazione del tramite fistoloso nella cavità orale.

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Plastic and Reconstructive Surgery

Cutaneous Carcinoma of the Nose and Ear

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THE intensive educational crusade against cancer, which has held sway over the past decade, has made the public ever more alert in the recognition of this dread disease. As a direct result, more early cancers of the skin are recognized than ever before. It is the purpose of this paper to direct attention to a too seldom used method of dealing with early malignant lesions of the nose and ear that will produce cosmetic results and cures gratifying to both the patient and the surgeon.

A nose or an ear may not be architecturally perfect, but it is a portion of a person's physiognomy that is constantly on exhibition. It is, therefore, understandable that a patient is justifiably unhappy when a part, or all, of either organ is disfigured or destroyed by injudicious treatment.

The atrophy of the skin and the telangiectasis produced by roentgen rays and radium are not only deforming but in themselves dangerous. The areas subjected to this therapy can never again be exposed to the direct rays of the sun for any length of time. In addition, carcinomas of the skin may develop upon irradiated areas.[1] Martin and Stewart[2] and others have reported the highly malignant and invasive spindle cell epidermoid carcinoma arising from previously irradiated sites.

Role of Sunlight.—It is generally agreed that prolonged exposure to sunlight of high ultraviolet content may cause cancer of the skin. The races of mankind over hundreds of years have adjusted themselves to their zones of habitation, as may be noted in the ruddy complexion of the blond, blue-eyed Nordic, the darker skin of the Mediterranean peoples and the deeply pigmented skin of the Negro race from the equatorial regions of Africa. Ackerman and Regato[1] observed that carcinoma of the skin seems to develop after chronic exposure to solar rays much more frequently in average Scandinavians and North Germans than in persons with coarser or darker skin. It is well known, they added, that Arabs, South American Indians and Negroes are only slightly susceptible, and they ascribed the definite racial differences in susceptibility to the texture of the skin and its pigment content. Boyd[3] named exposure to bright sunlight as an apparent causal factor of basal cell carcinoma of the skin. He noted that the incidence of this disease is extremely high in Australia, where as many as 50 cases a day may be encountered in the outpatient department of a Sydney hospital. The conditions there are peculiar, for in that country with a tropical sun, especially strong light and low humidity, there is white labor only. In other tropical countries pigment-protected skins shield those continually exposed to the brilliant glare. The relative immunity of the large Italian element in Australia's labor population is

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noteworthy. In New Zealand, the disease occurs much more frequently in the northern than in the southern end of the country. Recently, Boyd commented that the rodent ulcer is "very rare" in the American Negro.[3b]

Prolonged exposure to sunlight as a cause of malignant tumors of the skin was first suggested in 1894,[4] and ultraviolet rays were identified thereafter relatively early as an important factor in carcinogenesis in skins of certain type, with pigment production regarded as the body's chief protective mechanism. Thickening of the corneal layer as a response to exposure to light came to be recognized somewhat later as a primary protective factor, except in the skin of the Negro and Asiatic races, and the influence of complexion and hereditary racial stock was first stressed by Molesworth[5] in 1927. He noted the disproportionate number of Irish and Scottish patients in Australia. Philpott, Woodburne and Philpott[6] commented upon the higher incidence of cancer of the skin among the English settlers in Australia and in the Kenya Colony than in the natives. In view of these observations, they concluded that the large number of blue-eyed, fair-skinned descendants of the English and European settlers who homesteaded in Colorado late in the last century might be an influencing factor on the high incidence of cancer of the skin in that state, with its high altitude, bright sun, clear air, wide open spaces and a population largely engaged in outdoor occupation. Hall[1] observed that descendants of natives of the British Isles, especially those with blue eyes, frequently exhibit almost complete inability to acquire and retain a thick enough stratum corneum to protect them from rays of carcinogenic wavelengths in the amounts encountered in such regions as Texas, Arizona, Southern California and Australia. In his series of cases of cutaneous carcinoma the lineage of two-thirds of the patients was traced to England, Ireland and Scotland, although persons with this lineage do not predominate in the Los Angeles population, from which his series was derived; furthermore, 96 per cent of this group were classed as Caucasians.

Hall stressed particularly the suggestion that the color of the eyes has some genetic relation to susceptibility to or protection from cancer of the skin caused by exposure to light. In his classification of relative susceptibility according to inheritance of eye color, he regarded blue eyed children of blue-eyed parents as, in general, the most susceptible group, although many of these, capable of tanning without repeated burning, thus acquire a fair degree of immunity. Conversely, in his opinion, the more brown-eyed inheritance one possesses, the greater is his protection from the carcinogenic rays of the sun. The results of his study led him to two "conjectures": 1. In certain racial stocks and hereditary complexion patterns, notably those of the Negro and Oriental races, probably the Mexican and the Mediterranean and possibly all homozygous brown-eyed persons, sunlight is not an important factor, if a factor at all, in cutaneous carcinogenesis. 2. In persons of certain racial stocks with hereditary complexion patterns, notably those of persons of Irish-Scotch-English ancestry, probably the blue-eyed North Europeans, including the Scandinavian, and possibly all homozygous blue-eyed persons, sunlight is by far the most important carcinogenic factor when repeatedly encountered in erythema-producing quantities.

In the upper temperate zones, from the level of Philadelphia northward, for example, in the United States, there is practically no ultraviolet light in the sunshine at sea level from the fifteenth of September until around the fifteenth of April. The nearer the approach to the equator, how-

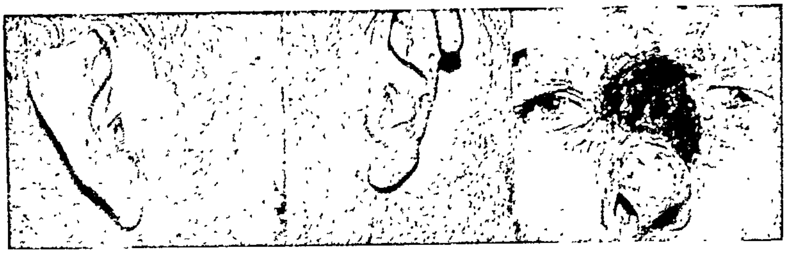

Fig. 1.—Results of roentgen rays.

ever, the higher the concentration of ultraviolet rays in the sunlight. In a study of 25,000 specimens of surgical tissues over a period of eight years in Virginia, Phillips[7] noted only a few epitheliomas. During a similar period in central Texas, the incidence of cancer of the skin in the tissues examined in his laboratory was 1 in 20. For Mexicans the incidence was rather low, and it was still lower for Negroes.

A study of 20 collected cases of carcinoma of the skin in Negroes led Schrek[8] to report a comparable number of lesions in the exposed and unexposed areas and an equal distribution between the sexes. He concluded that chronic inflammatory lesions are more important than solar rays as a causative factor of this disease in this race and that, although carcinoma of the exposed skin occurs much less frequently in the Negro than in the white race, the incidence is the same for the two races for carcinoma of the covered areas of the skin. In addition, he noted that in the white race cutaneous cancer occurs with greater frequency in the southern than in the northern states, but regarded the incidence in Negroes as unaffected by geographic factors.

Howles,[9] in his study of 2,220 cases of epithelioma of the skin collected from the records of Charity Hospital in New Orleans, included these mortality statistics on carcinoma of the skin in the United States: The percentage of deaths among Negroes from this disease for the years 1923 to 1927 was 1.4, while in 1927 the percentage of deaths among the whole population was 2.8. The race and sex incidence in his series was: white male patients, 1,579, or 71 per cent; white female patients, 550, or 20.4 per cent; Negroes, 54, or 2.4 per cent; and Negresses, 37, or 1.6 per cent. In these cases the nose and ear were exceeded only by the cheeks and lips as the most frequent sites of the lesions; in 360 cases, or 16.21 per cent, the tumor involved the nose, and in 126, or 5.67 per cent, the ear.

Carcinomatous lesions of the skin were first produced experimentally by ultraviolet radiation in 1928, when Findlay[10] reported that white mice manifested "papillomas and malignant epitheliomas" after eight months of daily minute exposures to radiation from a mercury vapor lamp. His work has been repeatedly confirmed, both with light from a mercury vapor lamp and with sunlight, and it has been estimated that the carcinogenic rays are those of wavelengths between 2,537 and 3,200 angstrom units, which lie in the same spectral region as those which produce the erythema of "sunburn" and the antirachitic effects of sunlight.[4]

The skin of those whose occupations have led to chronic exposure to sun and wind over many years is typical in appearance, being atrophic, wrinkled, leathery in appearance and characterized by loss of elasticity in the tissues. The pigmentation is unevenly diffused in a blotchy pattern, and there may be telangiectasis. Persons with florid complexions, as has been indicated, are much more susceptible to pathologic changes in the skin than those with more darkly pigmented skin. Those who burn easily in the sun and do not tan, and those who freckle on exposure to sunshine, are highly susceptible to cutaneous cancer. Keratoses readily develop in persons of this type, and all such lesions must be considered potential squamous cell epitheliomas.

Diagnosis.—Basal cell epithelioma is a relatively benign lesion; it does not metastasize to the lymph nodes but may be deeply invasive. It is the most common form of cancer of the skin, representing approximately 80 per cent of the lesions,[11] and it occurs chiefly on the upper portion of the face, above a line drawn from the angle of the mouth to the lobe of the ear.[12] Andrews[13] described the early lesion as a scaly spot, slightly thickened, glistening, and waxy or pearly in appearance, the most common clinical forms being the button and plaquelike types and the rodent ulcer. The indurated lesion may feel like a small inverted button, or small waxy papules may coalesce to form a plaquelike lesion, with similar papules fusing at the border to produce the characteristic ele-

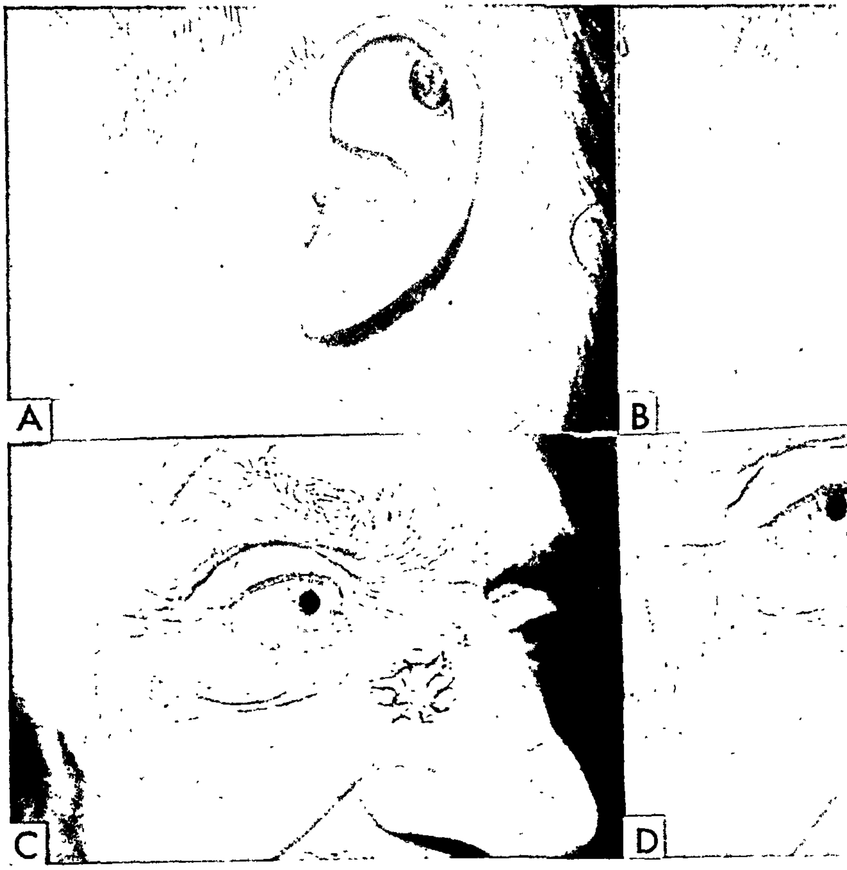

Fig. 2.—*A*, squamous cell carcinoma. *B*, results as seen in photc postoperative day. Note sutures in place. *C*, basal cell carcinoma. *D*, resu postoperative day.

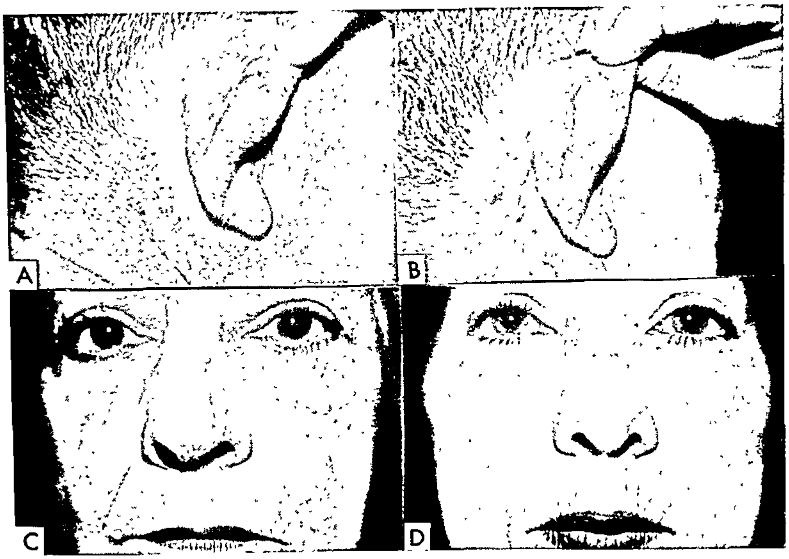

Fig. 3.—*A*, squamous cell carcinoma. *B*, results two years later. *C*, basal cell carcinoma of dorsum of nose. *D*, nose after two years.

vated rolled edge. The center is frequently crusted, and removal of the crust may reveal a raw, bleeding area or a glistening whitish surface. This tumor is especially inclined to be deeply invasive when over cartilage or bone. The rodent ulcer is a burrowing, mutilating ulcerative process that may continue until it destroys the entire ear or nose.

The squamous cell carcinoma usually arises from an existing precancerous lesion, such as a wart, keratosis, an ulcer, a pimple or a scab. Removal of the keratotic projection discloses a slightly bleeding base, with eventual ulceration. The borders are indurated; the lesion may be superficial, or there may be deep projection and invasion, and also fixation to deeper structures.[12] Not only is this tumor ulcerative and destructive, but it readily metastasizes to the regional lymph nodes. In a series of 256 cases of squamous cell epithelioma of the skin analyzed by Broders,[14] the average duration of the lesions in patients with metastasis was two and sixty-seven hundredths years, in those without metastasis, five and three hundredths years, and in those in whom no regional lymph nodes or salivary glands were removed, four and seventy-eight hundredths years. Ward and Hendrick[11] stated that it is an established fact that the younger the patient the more rapid the growth of squamous cell lesions.

The slit lamp, with its magnification and concentration of light, is an invaluable aid in the study and diagnosis of cancer of the skin. Small areas of infiltration may be seen which otherwise would escape attention. Adequate biopsy should always be performed before one determines the type of treatment to be recommended. The specimen should be taken with a sharp knife, extending well down into the tumor and to the edge of the normal skin, in order that the pathologist may have sufficient tissue to enable him to determine the degree of malignancy according to the classification of Broders[14] or of Cates and Warren.[15]

Choice of Treatment.—There is no specific remedy or method of treatment for cutaneous cancer. In the choice of therapy one must be governed by the size of the lesion, the cell differentiation, the amount of invasion that has taken place and whether or not the tumor is the type that is likely to metastasize. Roentgen rays and radium are widely used and are indicated for those tumors which prove to be, by their classification, radiosensitive. The use of radiation over the cartilage of the nose or ear is fraught with danger.[16] Often the underlying cartilage will prove to be just as radiosensitive as the tumor itself. The possibility of radiation necrosis, with its prolonged healing period and intense pain, should be most carefully considered before one prescribes radiation in these areas. In radiation therapy of the nose, Pack[17] stressed careful calculation of the dose in order to prevent perichondritis and chondritis, with the possible result of a painful ulcer. When cutaneous cancer recurs after irradiation, he declared that further irradiation as a rule is not indicated. The futility of such additional therapy is explained on the basis of loss of the original radiosensitivity, consequent need for a larger dose of radiation, and proneness of the normal adjacent tissues to radiation ulceration.

Surgical Excision and Skin Grafting.—With early, well defined tumors of the nose and ear, when it is reasonably certain that there has been no mestastasis, surgical excision with skin grafting always should be given first consideration, except for tumors within 1 cm. of the external auditory meatus, which, as Miller[16] recently reported, may be much more likely to metastasize because of the rich lymphatic drainage in this region and thus call for more radical surgical treatment. In his experience, the versatile role of the basal cell carcinoma in this location included that of a docile lamb, a fox and occasionally an octopus.

In excision and skin grafting of early lesions, it should be remembered at the outset that only matching skin should be used. For the nose, the cheeks and glabella are perfect donor sites. For the auricle, the skin in the postauricular region is used. The tumor is removed with a sharp knife, at least 1 to 2 cm. or more of normal skin being left between the incision and the tumor's edge. It will facilitate the insertion of the graft if the incision is made with a slightly inward direction. The tumor is then removed down to the periosteum or the perichondrium, as the case may be. The graft is cut at least two-thirds larger than the defect to allow for shrinkage and avoid tension on the edges. All capillary bleeding must be controlled before the graft is placed. The Hildreth battery eye cautery is excellent for the purpose of controlling the capillary oozing. The graft is then put into position and is sutured with a small, sharp, curved needle and No. 00000 silk so that the edges match exactly. An antibiotic ointment is applied, and the area is covered with surgical rayon and a dressing that will give firm but light constant pressure. The dressing should be left in place for seven to nine days. The edges of the skin of the donor site are undermined and closed parallel to the wrinkle lines, in case the graft was taken from the forehead. The sutures are removed on the seventh to the ninth day.

End Results.—In a group of 35 cases

of carcinoma of the skin in areas about the face, the site of the lesion in 13 was the nose and in 11 the ear. Thirteen of the 24 patients were men and 11 were women. There were 8 basal cell carcinomas, 11 squamous cell, 3 mixed and 2 precancerous. Of the 13 lesions of the nose, 8 were basal cell, 2 squamous cell, 2 mixed and 1 precancerous; of the 11 carcinomas of the ear, 9 were squamous cell, 1 mixed and 1 precancerous. The fact that there were 9 squamous cell and no basal cell lesions of the ear are in contrast to the 8 basal cell and 2 squamous cell lesions of the nose. More than five years have elapsed in 6 and more than two years in 10 of the 24 cases since excision and skin grafting of the lesion by the method described. There have been no recurrences, and only 1 patient has died, from unrelated cardiovascular disease. The cosmetic results have been uniformly excellent, and in no case has there been difficulty in getting the graft to grow. Figures 1 to 3 are illustrative.

SUMMARY

Exposure to direct sun rays of high ultraviolet intensity is a predominant factor in the causation of carcinoma of the skin in persons of certain racial stock. The lighter and thinner the skin, the greater the chance of cutaneous cancer if exposure takes place over a long enough period.

Irradiation should be used with extreme caution, and only by the best qualified radiologists, in the treatment of cancerous lesions of the nose and ear.

In the treatment of early basal cell and squamous cell epitheliomas of the nose and ear, wide surgical excision with immediate skin grafting should always be given primary consideration.

A series of 24 cases of carcinoma of the nose and ear is reported in which this method of treatment was employed. There were no recurrences, and the cosmetic results were excellent.

RÉSUMÉ

L'exposition directe aux rayons solaires riches en rayons ultra-violets est un facteur prédominant dans l'origine du carcinome de la peau chez les personnes appartenant à certaines familles raciales. Plus la peau est claire et fine, plus grands sont les risques de cancer cutané si l'exposition est poursuivie pendant un temps assez long.

L'irradiation devrait être utilisée avec extrême prudence, et seulement par des radiologistes qualifiés, dans le traitement des lésions cancéreuses du nez et de l'oreile.

Dans le traitement des épithéliomes cellulaires basaux et squameux précoces du nez et de l'oreille, il faudrait toujours envisager en premier lieu une large excision chirurgicale, avec greffe épidermique immédiate.

L'auteur rapporte une série de 24 cas de carcinome du nez et de l'oreille dans lesquels il a eu recours à cette méthode. Il n'a eu aucune récidive, et les résultats cosmétiques ont été excellents.

ZUSAMMENFASSUNG

Bei Menschen gewisser rassischer Herkunft spielt das direkte Ausgesetztsein dem Einfluss der Sonnenstrahlen von hoher utravioletter Intensität eine hervorragende Rolle in der Entstehung des Hautkrebses. Je heller und dünner die Haut umso grösser ist die Wahrscheinlichkeit der Entwicklung eines Hautkrebses, wenn die Exposition über einen genügend langen Zeitraum ausgedehnt wird.

Beit der Behandlung von Krebsen der Nase und des Ohres sollten Bestrahlungen mit äusserster Vorsicht und nur von hochqualifizierten Radiologen angewandt werden.

In der Therapie von Basalzellen-und Schuppenzellepitheliomen der Nase und des Ohres sollte in erster Linie stets die chirurgische Resektion mit unmittelbar angeschlossener Hautplastik in Erwägung gezogen werden.

Es wird über eine Reihe von 24 Krebsen der Nase und des Ohres berichtet, bei denen diese Behandlungsform zur Anwendung kam. Es wurden keinerlei Rückfälle beobachtet, und die kosmetischen Resultate waren ausgezeichnet.

RIASSUNTO

L'esposizione diretta ai raggi del sole, ricchi di radiazioni ultraviolette, è la causa principale nella genesi del cancro cutaneo. Quanto più la cute è sottile, tanto maggiori sono le modificazioni, ammesso che vi sia stata una sufficientemente lunga esponsizione.

Le irradiazioni devono essere usate con estrema cautela, e solo da parte di radiologi specializzati nella cura dei cancri del naso e dell'orecchio.

Nella cura dei carcinomi iniziali a cellule basali e a cellule pavimentose del naso e dell'orecchio si deve in primo luogo considerare la possibilità di un'ampia asportazione chirurgica con trapianto cutaneo immediato.

Viene riferita una serie di 24 carcinomi del naso e dell'orecchio così trattati. Non vi furono recidive e i risultati estetici furono eccellenti.

RESUMEN

La exposición directa a los rayos del sol de alta intensidad ultravioleta es un factor predominante como causa del carcinoma de la piel en personas de cierto grupo racial. Mientras mas clara y delgada es la piel, mayor es la incidencia del cáncer cutáneo si la exposición dura un período de tiempo suficiente.

La irradiación debe usarse con extrema cautela y solo por los mejores radiólogos en el tratamiento de lesiones cancerosas de la nariz y de la oreja.

En el tratamiento del epitelioma precoz de células basales y de células escamosas de la nariz y de la oreja, la excisión quirúrgica amplia con injerto de piel inmediato debe tener siempre la prioridad. Una serie de 24 casos de la nariz y de la oreja en los cuales se empleó este método, se reporta. No hubo recidivas y los resultados estéticos fueron excelentes.

SUMARIO

A exposição ao sol contendo forte irradiação ultra-violeta é um fator predominante na produção do carcinoma da pele de certas raças. Quanto mais clara e fina a pele maior a facilidade de cancerização se a exposição durar um longo período de tempo. A irradiação deve ser uzada com extremo cuidado e apenas pelos radiologistas experientes no tratamento das lesões malignas do nariz e da orelha.

No tratamento dos epiteliomas do nariz e da orelha tece considerações sobre a excisão cirúrgica ampla seguida de enxertia cutânea imediata.

Apresenta uma serie de 24 casos de carcinoma do nariz e da orelha em que seguio essa orientação de tratamento. Não houve recidivas e os resultados estéticos foram excelentes.

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In April 1922, six months before Halsted's death and thirty-seven years after the discovery of nerve-blocking, Halsted was tendered a public banquet by the American National Dental Association and presented with a gold medal. He was much touched by this spontaneous and generous, though belated, tribute. He wrote to a friend: "The celebration was a success. I am so thankful to have lived to take part in it. Not a wink of sleep did I get during the night of Saturday. I was too exhilarated for repose. Once before in my life I was kept awake by a great happiness; this was the night that I passed successfully the examination for Bellevue Hospital, in 1876." What an interesting, frank, almost naïve letter for a man of seventy, already a member of a great many learned societies and an acknowledged world-renowned master, who was so pleased by the tribute to a discovery he made when a young man of thirty-three!

Halsted, after making this remarkable discovery, made no attempt to capitalize on it or to "get himself before the public," as many lesser surgical lights succeed so well in doing. There were too many unsolved surgical problems he was too busy with.

—*Major*

Surgery of the Thyroid and Parathyroids

Diseases of the Parathyroids[*]

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LIKE all endocrinologic diseases, the dysfunctions of the parathyroids are on the one hand hypofunctioning conditions and on the other hyperfunctioning ailments. To the first mentioned belongs tetany in its different forms and from different origins. One may assume that the treatment of that disease is nowadays under fair control with regime, calcium, parathormone and A.T. 10 (Hotz). In this article, therefore, I shall go into more detail with regard to hyperparathyroidism.

It does not often occur that the problem of an endocrine disorder, once having been satisfactorily solved, again becomes involved as does hyperparathyroidism as a result of later developments.

It is necessary first to recall the era before 1925. Generalized osteitis fizrosa (Recklinghausen's disease), which today might be described as the primary "osseous type" of hyperparathyroidism, was not clearly distinguished from other osteodystrophies, e.g., localized osteodystrophy or Paget's disease. The Albright Syndrome, which in 1934 I called "hemilateral osteodystrophia" had not then been classically described, nor had the different fibrous dystrophias of bone studied by Lichtenstein and Jaffe, Snapper and Uehlinger been recognized.

Only after it was realized that Recklinghausen's disease was a well-defined pathologic entity in itself did this distinction become possible. The one or two parathyroid adenomas rather commonly observed in autopsies on patients with generalized osteitis fibrosa — were originally assumed to be manifestations of a *compensatory* type of parathyroid *hyperfunction,* destined to normalize the deranged calcium metabolism *(Erdheim's theory).* When, in 1926, I saw no success in a case of this type, either from Collip's parathormone therapy or from implantation of parathyroid tissue, I decided to approach the problem from the opposite angle. I therefore set out to find a parathyroid adenoma by operation and actually did find one that could be extirpated. The patient recovered *rapidly,* the calcium content of the blood became quickly normal, hypercalciuria disappeared and pain subsided. After a few months the bones had again absorbed a sufficient amount of calcium, and the patient, after having been a complete invalid for years, was able to move about. Contrary to what had been expected, no postoperative tetany developed in this case!

Up to the year 1932, successful operations had been performed in only about 24 cases similar to the one aforedescribed. Although the clinical picture showed great variety, the biochemical abnormalities (hypercalcemia, hypophosphatemia, hypercalcuria, increase of phosphatase) were decisive for the diagnosis, apart from the roentgen data. Tetany was recorded with comparative frequency.

In 1947 Norris reported 322 cases from

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the world literature, and in 1950 Rienhoff collected 597 cases. Probably, by this time, 1,000 patients have been operated on. Many of these cases are extremely interesting, for various reasons; here, however, I shall mention only the cases described by Anderson and Schlesinger, Simpson and Wilson, Smith and Goldman, Manzanilla, Gutman and Parsons, Black, Ben-Asher, Lievre, Zuckschwerdt, Hellström and others.

Clinically the skeletal manifestations usually held the foreground, although they were frequently accompanied by calculi of the urogenital tract. Gastrointestinal symptoms were rare.

For the surgeon at that time the main problem was the abnormal location of the parathyroid tumors, which could be palpated before operation only in extremely rare cases. When on exposure of the parathyroid region the tumor was not immediately found, a systematic search had to be instituted. Pathologic sites were preponderantly in the anterior portion of the mediastinum, more rarely in the posterior portion. This atypical location of parathyroid tumor is no longer a rarity, and since, as Paolucci pointed out, 25 per cent of such tumors are situated atypically, one must plan one's operations according to these facts.

In 1933 I published an account of my technical procedure if, in operating for primary hyperparathyroidism, no typically situated parathyroid tumors are present. In these circumstances one must look (1) inside the thyroid gland; (2) in the anterior portion of the mediastinum; (3) in the retrotracheal area, and (4) in the posterior portion of the mediastinum.

My last two operative cases, reported in *Schweizerische Medizenische Wochenschrift* in 1956, in an issue published in honor of the birthday of Prof. Jentzer, were cases of osseous hyperparathyroidism. In 1 case this was deep in the anterior portion of the mediastinum; and in the other, in which an operation was successful after two unsuccessful attempts by another surgeon, it was situated near the pericardium in the anterior portion of the mediastinum.

At that time, the fact that occasionally no tumor could be detected provoked unjustified criticism and doubts as to the usefulness of the operation, which occasionally had to be followed by a second or third operation that was sometimes successful. Another consequence of failure to detect a tumor was the effort made to secure satisfactory results by removal of *normal* parathyroid tissue. Today it is generally known that this procedure is useless and that the operation cannot be carried to a successful end. Indeed, the reasonless extirpation of normal parathyroid tissue may, in case a second operation becomes necessary, give rise to a serious tetany (Snapper).

One of the most interesting proposals for locating a hidden tumor of the parathyroid is that of Seldinger, who suggested arterographic study of the carotid artery, since in most cases a branch of the inferior thyroid artery is directed towards the aberrant parathyroid tumor.

In my experience, to try to remove healthy parathyroid tissue in the presence of disease not physiologically connected with the parathyroid glands *is useless*. Such proposals were made by Leriche and his school for Bechterew's disease, sclerodermia, in Dupuytren's disease and some other conditions.

So far only technical questions have been touched upon, which may now, at least to a certain extent, be regarded as solved.

A second serious problem for the surgeon is *to prevent tetany* after extirpation of the parathyroid tumor. In my experience, the extent of osseous change has nothing to do with the d [illegible]

Primary Hyperparathyroidism	Secondary Hyperparathyroidism
Clinical Type	
(a) Osseous	(a) Osseous (osteomalacia, myeloma, carcinoma)
(b) Renal	(b) Renal (congenital lesion, hypoplasia, chronic glomerulonephritis, renal failure with acidosis)
(c) Gastrointestinal (In adults only)	(Renal form in children and adolescents, rarely in adults)
Biochemical Data	
Marked hypercalcemia	Hypocalcemia
Low level of inorganic serum phosphorus	High level of inorganic phosphorus
High phosphatase level	Normal phosphatase level
Bones	
Spontaneous fractures frequent	Fractures very rare, but deformity of bones frequent
Roentgen Picture	
Cysts and tumors	Porosis or fibrosis
Parathyroid Data	
Usually 1, rarely 2 adenomas; hyperplasia rare	Hyperplasia only
Histologic Picture	
Adenoma with various cell types, usually chief-cell adenoma Primary hyperplasia; mostly water-clear cells	*Chief-cell and water-clear cell hyperplasia*
Operation	
Early operation indicated	Operation contraindicated

postoperative tetany. The same holds true for the results of histologic study of the extirpated tumor.

Finally, I should like to mention that the method advocated by Churchill and Cope, to implant a segment of the removed parathyroid tumor under the skin to hinder tetany, proved useless in 2 of my cases.

Nowadays one can confidently employ A.T. 10 against that operative sequela, but one must be cautious with this drug, since experimental parathyroid tumors can be produced by long standing treatment of this kind, and the kidneys may be affected by liberal use of A.T. 10 (Karcher).

A new phase began in 1934. Albright, Bloomberg, Castleman and Churchill reported 3 cases in which, according to the chemical data, unquestionable hyperparathyroidism, which, however, on operation showed diffuse hyperplasia of the parathyroid tissue instead of the expected one or two adenomas. Clinically, these conditions were distinguished from those presenting the classic osseous type of primary hyperparathyroidism by the predominance of purely renal over osseous manifestations. In 1935, the number of reported cases of this type had grown to 6 (Cope); by 1936 to 18. Eventually, in 1944, Cope reported that an overwhelming majority of his 78 cases belonged to the renal type, and cases of the osseous type were thus heavily outnumbered. The recognition of diffuse hypertrophy of parathyroid tissue required a new operative method, since the object of surgical intervention was no longer to remove either a normally or an abnormally situated adenoma but to "reduce" the parathyroid tissue (Cope).

Although the opposition to Erdheim's theory, based on the fact that compensatory hypertrophy of only one of the organs is scarcely conceivable, was to a certain extent shaken by this new discovery, there can be no doubt that here too, as in the case of adenoma, the hyperplasis is primary, because "reduction of parathyroid tissue" results in recovery.

Thus far only the Boston group of investigators had reported these observations. After Keating of the Mayo Clinic had visited Boston in order to study the new methods of examination, however, he discovered 24 cases of hyperparathyroidism during a period of two and one-half years, while in the preceding fourteen years there had been no more than 14 cases in all (Alexander, Pemberton, Kepler and Broders). In the Mayo Clinic he observed a large number of patients with hyperparathyroidism among those with renal lithiasis; and the renal type, in actual fact, outnumbered the osseous type.

Here the diagnosis of hyperparathyroidism had been established on the strength of repeated biochemical examination, and it was the Sulkovitch test — that simple and inexpensive test method for hypercalcuria—that had given the first hint of a derangement in calcium metabolism.

There is still a marked difference, however, between the results obtained by the Boston group and those obtained at the Mayo Clinic. Not one of Keating and Cook's patients, although these authors also noted a preponderance of the renal type, presented diffuse hyperplasia of the entire parathyroid tissue that had been so frequently reported by the Boston group. All of them, however, had adenomas.

The renal type of primary hyperparathyroidism is not necessarily, therefore, connected with diffuse hyperplasia of the parathyroid tissue, but its pathologic expression may also consist of isolated adenomas, as with the osseous type of primary hyperparathyroidism. This is not to exclude the fact that in the cases of diffuse enlargement of all the parathyroid glands, observed especially by the Boston investigators, a special and new entity of primary hyperthyroidism was presented. For a long time, of course, I also have examined all patients with lithiasis at my disposal. From the beginning of my studies on hyperparathyroidism I was interested in the relation between renal calculosis, osseous changes and parathyroid tissue. As early as 1933 I published, in collaboration with Übelhör, an experimental paper showing that, by injections of parathormone into guinea pigs with congestion of the urinary bladder, one may produce stones in the kidney. In nearly all experimental animals the calcification in the kidney can be produced in about four weeks.

In patients the results of my search for clear cases of renal hyperparathyroidism were poor. In only 1 case, at the place of my former work, was the condition observed at autopsy (parathyroid adenoma of the clear-cut renal type). During the past year in Vienna, at one of the most frequented urologic stations, only two clear cases of the renal type could be discovered; after removal of the parathyroid adenoma it was found that [illegible] ent could be cured (Meuser and Kreitner).

Today a number of exact studies are available on the relations between the kidney and the parathyroids.

Apart from the important data presented by McCallum, Snapper, Albright and Eger, one may assume that certain lesions of the kidneys stimulate the parathyroids, with consequent changes in the bones. (The old theory of Erdheim, then, is not completely dead!) In this way a vicious circle begins: Chronic disease of the kidney produces enlargement of the parathyroids. This enlargement seems to be a trial for increased function. It is further to be assumed that the parathyroids have a diuretic effect, and thus one understands Snapper's proposal to give parathormone Collip for some days after extirpation of a parathyroid tumor.

Actually, after a parathyroid extirpation the appearance of oliguria is typical and may cause a dangerous clinical situation.

The question should now be approached as to whether there also exists a *secondary type* of hyperparathyroidism in the sense of Erdheim's theory—a question that must be answered in the affirmative. This secondary hyperparathyroidism can, first of all, be produced experimentally. Clinically it is rare, but there is no doubt that it may be observed in association with certain diseases of bone, e.g., osteomalacia, osseous myelomatosis, osseous carcinosis, or generalized osseous myelomatosis (Barr and Dixon, Piney and Riach). Autopsy has confirmed the connection of this observation with secondary parathyroid hypertrophy. Similar observations have been made in certain cases of generalized carcinosis of the skeleton (Masson and Warren; Ben-Asher and others).

Far more interesting, however, is the fact that secondary hyperparathyroidism is encountered in children as well as in adults, as a result of congenital renal defects, such as cystic kidney or protracted chronic renal insufficiency (renal rickets, renal osteodystrophy). According to Snapper, secondary parathyroid hyperplasia arises on the basis of renal failure of long standing, with its subsequent acidosis. Additionally, in my opinion, the influence of renal lesions on the parathyroid function, producing primary hyperparathyroidism, cannot be completely excluded.

Theoretically, the clinical as well as the chemical distinction between primary and secondary hyperparathyroidism offers, in general, no special difficulty, as is shown by the table on page 522.

With respect to diagnosis, conditions are rarely not so simple as would appear from the table on page 522. In the presence of primary but also in that of secondary hyperparathyroidism, especially in the former, according to the latest studies, the renal character of the disease frequently holds the foreground. If, for instance, a patient has primary hyperparathyroidism caused by a parathyroid adenoma, renal insufficiency may develop at a comparatively early stage and, in turn, may stimulate even more pronounced hyperfunctioning of the parathyroids. Thus, not only may the degree of hyperparathyroidism become intensified, but the difference between primary and secondary parathyroid hyperfunction may become chemically confusing, particularly in view of the high values for serum phosphorus. On the other hand, as was pointed out by Jaffe, in a case in which there is, in the beginning, secondary hyperparathyroidism subsequent to renal disease, the parathyroid hyperfunction may become so excessive, that it exerts a decided influence on bone as well as on the already existing renal insufficiency. Here, too, biochemical studies offer no decisive diagnostic guide.

The peculiar juxtaposition of Erdheim's theory, on the one hand, and the undeniable effect of the extirpation of parathyroid adenoma, on the other, thus seem to be explained in general:

There exists a primary and a secondary type of hyperparathyroidism, fairly well delineated, between which, in case there are no overlapping biochemical manifestations and unless the two types are combined, it is readily possible to discern the difference.

Apart from the aforementioned clinical types of primary and secondary hyperparathyroidism, it must be emphasized that the most frequent type of hyperparathyroidism is the chronic progressive type, starting in the bones or in the kidneys and sometimes affecting the gastrointestinal tract.

Apart from the most common type, there are two extremes: first, the "silent" type of hyperthyroidism observed in most cases, until now described only at autopsy (Lievre, Keynes, Barker and Brines), and second, a rapid and dramatic progressive form of hyperparathyroidism that merges into the "toxic" form. It develops with cachexia, and most patients succumb in a few weeks or months to cachexia or renal insufficiency. Such cases have been described by Wanke, Alexander, Pemberton, Kepler and Broders, McClure and Lamm. I have observed 1 case of this type.

The question of *malignant* tumors of the parathyroids should also be touched upon. I have never encountered one. The latest reports (1953) come from Cope and Castleman, who collected 65 cases from the world literature. If these are more closely scrutinized, however, according to Stephenson, in only 10 cases were *real signs* of malignancy present. My own opinion is that malignant tumors of the parathyroids are extremely rare.

The indications for parathyroidectomy are fairly clear when one is dealing with primary hyperparathyroidism. Although some other disorders present similar clinical and roentgenographic aspects, they do not present the characteristic chemical picture of primary hyperparathyroidism. This applies particularly to "nongeneralized fibrous osteodystrophy"—a term descriptive of the various types originally referred to as "osteitis fibrosa localisata," etc., which may involve either several bones or extensive portions of bone. In none of these cases were the chemical data identical with those observed in cases of primary hyperparathyroidism, and in no instance was a parathyroid adenoma detected (Mandl).

Such cases are interesting in another direction, especially with regard to the differential diagnosis of malignant tumors.

Paget's disease—up to the year 1926 still identified with Recklinghausen's disease—has now once and for all been distinguished from primary hyperparathyroidism for similar reasons, even though occasionally a "pagetoid" roentgen appearance may be encountered in this area.

Of late, much attention is being given to a certain disorder, the nature of which is absolutely unclarified, but which was originally considered to bear some relation to hyperparathyroidism. This is the so-called "Albright Syndrome" (1937), also referred to as "polycystic fibrous dysplasia with pigmentation of the skin associated with pubertas praecox in females" (Lichtenstein-Snapper). I had the opportunity to observe one of the first cases of this type with Borak and Doll in 1934. Even then I looked for a parathyroid adenoma and expressed my opinion that this was a separate entity and had nothing in common with hyperparathyroidism. Since Albright published his report, quite a number of such cases have been described (Dockerty and his co-workers; Mondor and his associates; Robson and Todd; Summerfeldt; Neller; Sternberg and Joseph). A total of more than [illegible], has thus far been studied ([illegible] and Jaffe), in approximately [illegible] of which the patients underwent operation and a search was made for a parathyroid adenoma, which was, by the way, always in vain. The condition has nothing in common with primary hyperparathyroidism and still awaits clarification.

As manifold, therefore, as are the problems that still need investigation, there can no longer be any denial of the fact that primary osseous and renal hyperparathyroidism can exclusively be cured only by operation, i.e., removal of one or several adenomas or reduction of parathyroid tissue.

Although the investigating authors—far too much occupied with other aspects of the question—are as yet unable to give accurate follow-up data, it appears justified to speak of the long-term results of parathyroidectomy. These results have been reported as follows:

Snapper—9-10 years
Coryn—4 years
Wichmann—8 years
Alexander—6 years; 11 years
McClure-Lamm—4 patients healthy 4 to 8 years

Further reports on long-term results have been made by Oehllecker. Goetze's patient remained cured for twenty years; the patients of Redwitz, ten, fourteen and nineteen respectively; a case of Hellner's fifteen years. Nickels described the cases of patients operated on at the Surgical Clinic in Bonn, with long-standing success.

In the case of a patient in whom the presence of a parathyroid tumor cannot be confirmed, the operation should be repeated. It is well known how often this has resulted in success; one recalls that the heroic Captain Martell was operated on by Churchill seven times, until the parathyroid tumor at last was found.

SUMMARY

It appears that today, thirty years after the first successful parathyroidectomy was performed in the treatment of primary hyperparathyroidism, many questions are still in a state of fluidity and that this field of research has not yet lost its urgency.

But in any case the operation for parathyroid tumor that I introduced is already bringing about real achievements by endocrinologic surgeons against a deadly endocrinologic disease.

ZUSAMMENFASSUNG

Offenbar sind auch heute noch, dreissig Jahre nach Ausführung der ersten erfolgreichen Resektion der Nebenschilddrüsen zur Behandlung des primären Hyperparathyreoidismus, viele Fragen auf diesem Gebiete ungeklärt, und die Notwendigkeit weiterer Forschungsarbeit hat nichts an Dringlichkeit eingebüsst.

Andererseits hat die vom Verfasser angegebene Operation zur Behandlung von Geschwülsten der Nebenschilddrüse in den Händen von endokrinologisch geschulten Chirurgen schon zu wirklichen Erfolgen in der Bekämpfung einer sonst tödlichen innersekretorischen Erkrankung geführt.

RÉSUMÉ

Il apparaît aujourd'hui, trente ans après la première parathyroidectomie couronnée de succès pour hyperparathyroidie primaire, que bien des questions restent encore obscures et que ce champ de recherche n'a rien perdu de son urgence.

Cependant l'opération pour tumeur parathyroidienne introduite par l'auteur donne déjà des résultats très satisfaisants dans cette affection endocrinienne fatale, lorsqu'elle est pratiquée par des spécialistes en chirurgie endocrinienne.

SUMARIO

Trinta anos após a realização da primeira paratireoidectomia executada com bom êxito, parece ainda hoje que certos

aspectos da questão exigem e justificam novas pesquizas. Em nenhum caso de tumor paratiereoideo a operação que eu divulguei trouxe ainda uma solução completa no parecer dos cirurgiões de glandulas internas contra uma molestia endócrina mortal.

RESUMEN

Parece que hoy, treinta años después de que la primera paratiroidectomiá fué efectuada con éxito para el tratamiento del hiperparatiroidismo primario, muchas preguntas están todavía en un estado de poca claridad ya que este campo de investigación no ha perdido aún su importancia.

Pero en todo caso, la operación para tumor paratiroideo, que yo introduje, ya está dando verdaderos resultados a cimjanos endocrinológica mortal.

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Editorials

Results of Eck's Fistula Operation (Portacaval Shunt)

IN 1927, Loeffler[1] characterized the current teachings as to hepatic structure as a fiction. In 1942, Mann[2] expressed the opinion that the history of the hepatic circulation was buried in the relevant literature.

According to Child,[3] writing in 1954, the liver controls the blood volume of the heart, the concentration of the erythrocytes, the venous and portal pressure, hence, according to Blond[4] (1932-1950), also the water balance. Insufficiency of the liver leads to disturbances in the resynthesis of human proteins and to a decrease of the serum proteins to levels of 2 to 2.5 Gm. per hundred milliliters.

Ore,[5] in 1861, observed sudden death in rabbits after ligation of the portal vein. Claude Bernard,[6] in 1877 and Schiff,[7] in 1881 confirmed Ore's observations in dogs. Nicolai Eck[8] in 1877 succeeded in keeping dogs alive after ligation of the portal vein if an anastomosis between the caval and portal veins had been performed simultaneously. Pavlov[9] in 1893, reexamining Eck's method, observed that some of the animals succumbed to the operation within thirty to forty minutes, whereas others survived for ten to twelve hours. Occasionally an animal survived ligation of the portal vein near the entrance to the liver.

Boyce and his co-workers[10] in 1935 explained the occurrence of death by hemorrhage into the splanchnic vessels but suggested that some neurogenic mechanism is also involved. In my own interpretation death occurs from hepatic coma due to the flooding of the systemic circulation with toxic proteins.[4]

Eck's fistula causes abrupt dilatation of the pre-existing portacaval shunts, and all unassimilated foreign polypeptides derived from the intestinal tract flood the systemic circulation. These toxic proteins are, in my opinion, also responsible for the resulting thrombosis which Boyce and his associates, in their experiments, observed in ever-increasing number. These experiments appear to support my thrombosis hypothesis,[4] according to which *blood clotting is caused by the mixing of the blood proteins of different origin.*

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1. Loeffler, L.: Ztschr. f. Anat. & Entwicklungsgesch. 84:511, 1927.

2. Mann, F. G.: Quart. Bull. Indiana Univ. M. Center 4:43, 1942.

3. Child, C. J.: The Hepatic Circulation and Portal Hypertension. Philadelphia and London: The W. B. Saunders Company, 1954.

4. Blond, K.: Arch. f. klin. Chir. 170:597, 1932; Wien. klin. Wchsnschr. 45:1348, 1932; ibid. 47:764 and 1409, 1934; M. Klin. 31:880, 1935; J. Obst. & Gynec. British Empire 49:512, 1942. Blond, K.: Haemorrhoids and Their Treatment. Bristol: John Wright & Sons, 1940. Blond, K., and Haler, D.: The Liver: Porta Maiorum. Bristol: John Wright & Sons, 1950. Blond, K.: The Liver and Cancer: A New Cancer Theory. Bristol: John Wright & Sons, 1955. Eine Neuer Krebstheorie, Hippokrates 27 Yhrg., vol. 2, June 15, 1956.

5. Oré, M.: Functions and Obliterations of the Portal Vein. Bordeux, 1861.

6. Bernard, C.: Comp. rend. Acad. de sc. 84:1201, 1877.

7. Schiff, M.: Rev. med. de la Suisse Rom. 1:38 1881.

8. Eck, N.: Voyenno-med. 130-1, 1877; translation, Surg., Gynec. & Obst. 96:375, 1952.

9. Pavlov, I. P.: Arch. bol. nauk. St. Petersburg 2:580, 1893.

10. Boyce, F. F., and others: J. Lab. & Clin. Med. 20:935, 1935.

Eck was convinced that the few surviving dogs were free of pathologic change and therefore that the fistula would have the same effect in man when created in cases of ascites. Pavlov, as has been stated, was unable to confirm Eck's observation. A number of his dogs showed severe toxic symptoms after the operation. Instinctively they refused to eat meat, and they exhibited signs of depression and suffered from convulsions, ataxia. catalepsy and, occasionally, blindness. These observations were confirmed by others. A satisfactory explanation of this syndrome, however, could not be given, in spite of heated controversy on the subject. In 1949, Markowitz[11] of the Mayo Clinic reported that dogs with Eck's fistula appeared to be in comparatively good condition as long as meat was omitted from their diet. After about eight weeks, pronounced atrophy of the liver was observed, the organ shrinking to one-third its normal size.

In certain species of monkeys (Macaca mulatta) the creation of Eck's fistula was followed by the development of a new collateral circulation between the ligated portal vein and the liver. As a result, normal conditions of the organism returned spontaneously. The monkeys instinctively refused meat. The collaterals were established within a few weeks. This syndrome can be interpreted without difficulty. Once the collateral circulation has developed via the preexisting and newly formed portohepatic veins, the intestinal tract and its accessory glands drain again into the liver, where the toxic proteins derived from food, i.e., the breakdown products of meat, can be assimilated.

Subsequent to the ligation of the portal vein, portal hypertension develops, leading to dilatation of the preexisting collaterals. Before the formation of new collaterals is complete, toxic proteins may invade the systemic circulation, leading to toxemia and death due to hepatic coma.

It is a known fact that the fetal liver does not function and that the placenta acts as the main metabolic organ. The organism has solved this problem in such a miraculous way that all substances indispensable for function and growth are assimilated by the maternal organism and supplied direct to the general circulation of the fetus, bypassing the liver via the ductus venosus Arantii. Post partum this duct becomes obliterated, because the placenta is no longer present and because the infant's liver starts functioning (though within limits).

When an Eck's fistula operation is performed on an adult human being or an experimental animal, circulatory conditions partially duplicating fetal conditions are established without a placenta. The subsequent toxemia shows plainly that such an operation is physiologically unsound and therefore useless. My interpretation of these experiments elucidates the contradictions and explains the fatal outcome that must be expected unless the organism can restore normal conditions in time and thus make amends, in nature's remarkable way, for the senselessness of these experiments.

Dilatation of the splanchnic vessels and the severe congestion and hypertension of the portal vein associated with cirrhosis of the liver have been studied, especially by the French school. The slow development of hepatic cirrhosis is accompanied by signs of toxic conditions due to the toxic proteins which, according to the degree of cirrhosis, are flooding the general circulation and will continue to do so until the patient succumbs to hepatic coma. Himsworth,[12] in 1947, described a case of complete occlusion of the portal vein. He observed the rapid development of ascites, melena, abdominal colic and ileus. Enlargement of the spleen was followed by death within a few days.

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[11] Markowitz, J.: Experimental Surgery. Baltimore: The Williams and Wilkins Company, 1949.

[12] Himsworth, H. P.: Derangement of the Hepatic Circulation in Disease, Tr. 6th Congress Josiah Macy Foundation, 1943; Liver In[illegible] 73.

Acute obstruction of the venae hepaticae, e.g., in a case of acute endophlebitis, produces a similar syndrome. Colicky abdominal pains, nausea, vomiting, ascites and hepatosplenomegaly have been noticed. Hepatic coma and death rapidly ensue. In monkeys death occurred within ten to sixteen minutes after ligation of the hepatic vein. These phenomena can be explained by logical interpretations. Cirrhosis of the liver is a late stage of the disorder of the hepatic circulation, i.e., a pathologic process beginning with insufficiency of the liver and terminating in death. In some cases neoplastic transformation may occur in various organs that cooperate with the liver in metabolism.

Child[3] and many pathologists have noticed, after spontaneous thrombosis of the portal vein, the development of *a mass of twisted cavernous vessels and the occurrence of spontaneous recanalization of the obstructed portohepatic circulation;* the organism itself overcame the obstruction. This remarkable observation indicates indisputably that in man the performance of an Eck's fistula operation for therapeutic purposes is as hopeless an undertaking as any of the other unphysiologic operations carried out in the past (e.g. Talma's operation[13]). In patients surviving spontaneous thrombosis increased portal pressure that may equal 300 to 400 mm. of physiologic solution of sodium chloride is the moving force responsible for the development of an enormous collateral network. The development of ascites in the presence of hepatic cirrhosis depends largely on the degree of the hepatofugal backflow. Ascites will promptly follow the development of retroperitoneal thrombosis in the portacaval shunt brought about by the mixing of portal and caval blood.

Child considers it a mystery why portal hypertension develops in some patients and not in others. He is of the opinion that the problem can be solved only by discovering the cause of hepatic cirrhosis. As cirrhosis of the liver is not a disease *sui generis* but only one phase of a primary disorder of the liver that can be produced experimentally by means of hepatopathogenic toxins surely there is no need for further elucidation or additional research with respect to the causation of this disorder. If one had to wait until the etiologic factors in every single one of the innumerable structural changes and their various stages were explained, the wait would be very long, in view of the fact that so far not one of the morphologic changes has been explained.

That the theories of cellular pathologic change are untenable, and to what extent, can be seen when one considers current teachings as to hepatic cirrhosis; its cause can never be explained by structural changes in the liver. Histologic pathographic study* is a descriptive but in no way an explanatory branch of medicine. My interpretation of portal hypertension and of the primary damage to the liver on which the former depends differs fundamentally from that of the authors whose etiologic research is based on the study of static structural changes in dead tissues. In my opinion both the changed pressure conditions in the portal vein and the primary damage to the liver that ultimately leads to cirrhosis are manifestations of a disturbed vascular dynamism. This disturbed dynamism is the result, not the cause, of impaired cooperation between the damaged liver and the intestinal tract.

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[13] Talma, S.: Berlin klin. Wchnschr. 35:833, 1898.

*Pathography must not be confused with pathology which is supposed to be an explanatory and not a descriptive branch of medical science.

Portal hypertension may also develop suddenly, for instance, after ligation of the portal or hepatic vein. If the pressure increases slowly, only certain portal roots become obstructed and dilated. The flooding of the mucous membranes of the abdominal organs or of parts of the intestinal tract produces a large variety of syndromes, pathographically described as specific organic diseases. Their genesis, however, has never been explained. No wonder the cause of these fictitious diseases has never been disclosed.

Since portal hypertension may be intermittent, it may also disappear. Since destruction of the liver cells may be followed by regeneration, several clinical syndromes may improve.

Shell,[14] in 1931, reported the close relation existing between insufficiency of the liver and the accompanying syndromes. Ten per cent of his cirrhotic patients had gastric or duodenal ulcers. According to Blond and Haler,[4] all ulcers of the intestinal tract, including those of the esophagus and the rectum, are signs of intermittent portal hypertension. The known intermittent hemorrhages from esophageal and rectal varicosities are signs of portal back-pressure, depending on the actual degree of hepatic insufficiency. Alterations of the portal back-pressure may occur physiologically, e.g., at the height of the digestive process or during defecation in the majority of cases. The most frequent signs of portal hypertension are hemorrhoids and their complications; it must, therefore, be a matter of surprise that textbooks still maintain their cause to be unknown, most probably because it is too difficult to grasp the causation of dynamic processes on the basis of pathographic descriptions. With my interpretation in mind, I cannot admit a different causation for esophageal, gastric, duodenal and rectal ulcers. Colitis ulcerosa is also due to portal backflow into the colon; that the clinical picture differs has to do only with the local intestinal flora.

Child, in 1954, stated as a result of his animal experiments: "When the obstruction to the portal flow lies outside the liver, numerous anastomotic channels develop in the immediate vicinity of the occluded portal or splenic veins. These partially circumvent the block, and portal blood gains access to the liver almost directly. The components of this type of collateral circulation are the deep cystic veins of the gall bladder, the epiploic veins of the gastric omentum, the hepatocolic and the hepatorenal veins and the accessory veins of Sappey." There are, in addition, a great number of portacaval shunts (cf. Blond and Haler, Eig. 4). Child also affirmed that, after ligation of the portal vein or after Eck's shunt operation, either in man or in the experimental animals, *survival is possible only if new portohepatic collaterals are formed that restore the portohepatic circulation.* This interpretation appears to prove that the portal blood contains toxic proteins—that is, the true carcinogenic substances, according to my interpretation. Anemia, leukopenia and thrombocytopenia belong to the syndrome of portal hypertension. It is known that after splenectomy the blood picture changes; therefore the spleen has been made responsible for the abnormal blood picture, though no explanation of its mechanism has been offered. Splenomegaly also belongs to the syndrome of portal hypertension. The supposed hyperfunction of the spleen is termed "hypersplenism," a term that explains neither the cause of the disorder nor the late effects of splenectomy. I have already pointed out that enlargement of the spleen is a sign of hepatic insufficiency and of portal backflow. Toxic proteins, when flooding the spleen, may also reach the hemopoietic or ans vi [illegible] laterals between the spleen and the systemic circulation, acting as irritants and producing anemia and thrombocytopenia. Decrease of the number of thrombocytes is, therefore, not the cause but the effect of the damage to the hemopoietic organs.

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[14] Snell, A. M.: Ann. Int. Med. 5:338, 1931.

According to Child, a great number of patients are affected by intermittent portal hypertension. Since, in my view, acute damage to the liver accounts for the majority of the abdominal symptoms, I have no doubt that Child's observation is correct. It is in full agreement with my own ideas.

Blakemore and Lord[15] in 1945 and Whipple[16] in 1946 devised modification of Eck's shunt operation for the treatment of portal hypertension in man. In view of the failure of Talma's operation and its modifications,[13] it is difficult to understand why anyone should tend to return to such unphysiologic procedures. Child ascribed death, which ensued in 3 cases after such an operation, to insufficiency of the liver parenchyma. Though the operation was successful in reducing portal hypertension, he argued, the progressive course of the hepatic cirrhosis could not be arrested. This interpretation is erroneous. Cirrhosis, itself the result of primary hepatic insufficiency, must have been present long before the surgical intervention; the patients thus succumbed to the unphysiologic operation. Eck's shunt procedure only increases the flooding of the general circulation with toxic proteins. The reduction of portal hypertension can in no way have a favorable therapeutic effect in view of the fact that hypertension is not the cause of cirrhosis but its effect. The operation diverts all available foreign proteins—including those proteins which, before the operation, were still partially assimilated by the damaged liver—toward the systemic circulation, thus merely hastening the end.

There is a further observation of Child that may be interpreted in a different way. He noted that patients who had had jaundice before the performance of the shunt operation showed an increased degree of jaundice after it. The values for blood bilirubin increase because the liver is no longer supplied via the portal system with the building elements for bile production. This phenomenon, as well as salt and water retention and the increasing edema and ascites, contraindicate the shunt operation. In some of Child's cases postoperative thrombosis developed close to the site of the Eck's fistula (cf. "Thrombosis" in "The Liver," Blond and Haler, 1950). Child draws the right conclusion from the failure of these operations; namely, that by reduction of portal hypertension no favorable influence upon the progressive course of the hepatic insufficiency and the cirrhosis can be achieved. A further explanation of this is hardly required. One must clearly understand that the portal hypertension is *not the cause but the effect* of damage to the liver.

Thus Child has provided the experimental proof for my conclusion that the acute invasion of foreign dietary proteins, which either have bypassed the hepatic filter or have passed through a damaged liver, must lead to hepatic coma. Child also ascertained that in patients with ascites and jaundice the shunt operation is followed by coma and anuria and that the degree of both jaundice and ascites increases. The results of shunt operation in man, therefore, provide further support for my hypothesis with regard to carcinomatous charge.

Observations on 11 patients led Dye[17] in 1953 to similar conclusions. Though after shunt operations in man he noticed the disappearance of esophageal varicosities, he does not consider this a proof of the operation's success. Varicosities of the esophagus may also disappear spontaneously, a phenomenon which the author correctly ascribes to changes in the liver. This observation is in agreement with my conclusion that portal hypertension may take an intermittent course.

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[15] Blakemore, A. M., and Lord, J. W.: Ann. Surg. 122:476, 1945.

[16] Whipple, A. O.: Bull. New York Acad. Med. 22:251, 1946.

[17] Dye, W. S., and others: Philadelphia and London: The W. B. Saunders Company, 1953.

According to Child, even today it is not quite understood why water and electrolytes should be excreted by some cirrhotic patients and not by others, or why severe postoperative ascites develops in some patients with a certain degree of cirrhosis, whereas in others, apparently with an equal degree of damage to the liver, this does not occur. This problem also could be answered by my hypothesis. The degree of damage to the liver represents, as has been repeatedly stated, a quantitative dynamic problem. Child himself mentioned an "apparent" equal degree of hepatic damage. Preexisting portacaval collaterals vary. The very moment portal hypertension sets in, dilation of the collaterals occurs. It depends, therefore, on the individual anatomic variations that prevail in the patient whether, after ligation of the portal vein, the number of collaterals will be sufficient to insure the passage of a certain amount of portal blood through the liver. Experimental dogs, as well as patients, owe their survival after the shunt operation only to the presence and the sufficient dilation of the collaterals. The ingenuity of the organism surpasses that of the experimenters.

Anuria following Eck's shunt operation may be explained by the flooding of the kidneys with toxic proteins via the plexus of Retzius. Also, the effect of renal decapsulation is a result of the interruption of communications between the renal capsule and the portal system, normally sustained by means of these portarenal anastomoses. Until recently surgical intervention was considered contraindicated for a cirrhotic patient. Our medical ancestors knew that in such cases operation leads to oliguria and ascites and that the outcome is fatal.

Further support for my reasoning is found in another observation reported by Child: patients with a serum albumin level below 3 Gm. per hundred milliliters were found to be bad risks for shunt operations. Child tried, therefore, to raise the serum albumin level to 3.5 or 4 Gm. per hundred milliliters by transfusion of human blood plasma. In other words: In the cirrhotic patient, as a result of portal backflow and damage to the liver, the serum albumin level is extremely low. Transfusion of normal human plasma is required to make such a patient fit for surgical intervention. The damaged liver is incapable of supplying the body with sufficient amounts of assimilated proteins. The polypeptides derived from food accumulate in the portal veins, chronically irritating the mucous membranes of the intestinal tract and its accessory glands until, ultimately, they induce neoplastic degeneration and merely provide the nourishment for malignant growth.

Having investigated the conditions arising after ligation of the portal vein, Child distinguished three phases of adaptation in the splanchnic vessels in response to the changed portohepatic circulatory conditions. After the portal vein has been ligated, its blood immediately returns via pelvic collaterals. During portal hypertension this condition persists for some time. At the end of a period varying from about one week to two months after the operation, a large number of collaterals develop in the immediate vicinity of the ligation. Two to six months later, confluence of many of these collateral vessels can be noted, and after fully four to six months one or two of [illegible] [illegible]ls may succeed in comp[illegible] obstruction. By using a contrast dye that could be proved to enter the liver, Child was able to demonstrate these developmental stages. He concluded that after six months the experimental portal hypertension has disappeared and has had a chance to disappear, since it lies within the power of the animal organism to form a mighty collateral network. Enlargement of the spleen or the production of ascites in these experimental animals was unsuccessful throughout. Even if such disorders occurred, they persisted only for a few days after the operation and usually disappeared in less than a week.

From these experiments the following conclusions can be drawn:

1. Ascites and spontaneous enlargement of the spleen cannot be produced in either the healthy human being or the healthy experimental animal by ligation of the portal vein.

2. Portal hypertension in man is the result of damage to the liver. The damaged liver is unable to absorb fully the amount of blood supplied by the portal system, or to achieve full metabolism of nutritional substances.

3. The healthy liver can overcome the obstacle after ligation of the portal vein by forming a new portohepatic collateral circulation, thus restoring the *status quo ante*.

4. The formation of such collaterals demonstrates the astounding adaptability of the organism and its capacity to overcome experimentally induced obstacles.

5. The passage of portal blood through the liver is of vital importance, and any operation intending to bypass the liver is fatal unless the organism can restore normal conditions.

6. Any disorder of the liver that gives rise to disturbances of the hepatopetal flow from the splanchnic vessels will invariably lead to manifold functional disturbances (syndromes) of the intestinal tract) and its accessory glands. *Malignant growth is only one of the problems of the whole syndrome.*

7. The venous duct of Arantius is obliterated post partum because the intestinal blood has to pass through the liver after birth. The shunt operation artificially reestablishes embryonic circulatory conditions in adults. The fact that, after this operation, the organism has to create new compensatory collaterals proves the vital importance of the portohepatic circulation, the permanent interruption of which must prove fatal. Chronic disturbances of the portohepatic circulation induce precancerous conditions and neoplastic tumor growths.

8. Proper physiologic function of the liver is as important for the maintenance of metabolic processes and, therefore, as vital for life, as is cardiac function for the maintenance of the circulation. *Any damage of liver function must reveal itself in pathologic changes in organs that cooperate with the liver.* There is little chance of elucidating the cause of the majority of organic diseases unless the role played by the liver in metabolism is fully grasped.

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LONDON, ENGLAND

Medical and Surgical Aspects of Chronic Ulcerative Colitis: An Appraisal

THE purpose of this editorial is not to belittle or condemn standard methods of management of colitis but rather to emphasize what has seemed important in treatment, both medical and surgical, over a considerable period of years. Emphasis is placed on the psychogenic factors, the basic treatment program and the rejuvenation of an old but bolder concept of what goes into the surgical problem, with a reduction in the number of ileostomies. If one stops to consider the overall problem, it becomes obvious that the physician in charge must be father confessor, advisor and executive if the best management is to be carried out. In the hospital I serve, this has, by principle and practice, grown to be the exact state of affairs. Since the disease runs the entire gamut of medicine, it taxes the ingenuity of the shrewdest internist, the ever-observant psychiatrist and the most exacting surgical technician. Whenever possible these responsibilities should be combined in one person, the attending physician.

One often hears it remarked that the abdomen is the sounding-board of the emotions, since it is so well supplied with autonomic nerve fibers, of both the sympathetic and the parasympathetic system. The lines of communication between brain centers and the viscera and the behavior patterns of the gastrointestinal tract that have been utilized in infancy are carried to the brain and lodged there in that reservoir of memory, the subconscious mind. In spite of the fact that the relation between psyche and soma is well known, it is surprising how little attention is given to this matter in the actual management of gastrointestinal disorders. Rarely is an evaluation made of the personality or the life situation of the patient. The physician may be too busy to try to work this out with the patient. Giving him a prescription for a digestive medicant is the path of least resistance. Even though he admits that there is a large "nervous element" present, he often looks upon this feature as secondary and probably a consequence of the physical disorder. He does not consider the psychic factors in illness on the same scientific level with gastric analyses, stool cultures or roentgen studies, and therefore he pays scant attention to them. He accepts psychogenesis only abstractly and with vague understanding of the nature of mental mechanisms and the part they play in illness. It was only a few years ago that psychiatrists impressed the profession with the fact that they proposed to cure chronic ulcerative colitis with psychotherapy alone, without the use of drugs. It was an interesting exercise but, like all branches of medicine, was self-limited.

If all the interested departments can be brought into the picture and integrated, there is no doubt that the patient will be benefited. It takes time and persistence to question the patient along the line of his mental processes. He may be sensitive and conclude that he is regarded as a weakling who "can't take it," or perhaps that he actually is a "mental case." The physician, not wishing to arouse ill will or antagonism, follows the traditional line of phys-

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From the Ferguson-Droste-Ferguson Hospital, Grand Rapids.

Read at the Mid-Atlantic Division Regional Meeting of the United States and Canadian Sections, International College of Surgeons, White Sulphur Springs, Virginia, Feb. 10-13, 1957.

ical and laboratory investigation, diet and medication, making no real effort to understand the deep-seated influences to which the patient has been exposed.

Psychotherapy in gastrointestinal illnesses has been handled rather superficially in medical articles and textbooks. It is easy enough to advise a patient to avoid worry and strain, to get plenty of rest and to investigate and consider his working conditions or marital relations for sources of tension, and then suggest to him that he forget them now, and eliminate them. Obviously, he must live with them. The psychosomatic problem is much too large to discuss in the short time allotted, and most physicians and surgeons are only amateur psychiatrists.

The patient with chronic ulcerative colitis is not usually seen until he is in an acute fulminating phase of his disease. This often requires his admission to a hospital, where certain necessary steps in the study program are set in motion. A detailed history is taken, which will be filled in from time to time as he makes the information available. A thorough physical examination is carried out, and routine laboratory tests are made and the results assembled. The blood picture, the renal picture, the renal reserve and the cardiac status must be known, and, of course, sigmoidoscopic and roentgen studies are carried out in detail. In this hospital we prefer to isolate the patient to a certain extent, shielding him from his family and friends. It is usually necessary to select certain nurses and attendants to care for his needs, making sure that they will please and satisfy. His diet is high in protein and acid ash, with more than adequate intake. We like to think of his bowel as asking for work, rather than allow it to remain in a "dither" for lack of it. We routinely take the pH of the bowel and its secretions, and we have noted that a pH of 7.8 to 8.2 or 8.4 is usual. When the pH becomes about 7.8 the bowel will start digesting ulcers.

I assume that all surgeons are familiar with the proctosigmoidoscopic picture of chronic ulcerative colitis. We immediately evaluate the situation and take steps to preserve the rectal segment, just in case a colectomy becomes necessary. These steps take the form of periodic instillations of sulfa preparations or aqueous Zephiran in small quantities in order that a degree of antisepsis may prevail and tenesmus be avoided. The patient is not allowed to go to the toilet, since he frequently indulges in "throne sitting" and the resultant tenesmus tends either to telescope the bowel or to traumatize it to such an extent that fatigue pains and a sense of fullness and a desire to go to the toilet become the order of the day. To counteract these effects, and to neutralize the irritating mucus coming down the bowel, acidulated irrigations may become necessary from time to time. The patient is instructed not to answer the urge to go to the toilet, because it will pass off in a few minutes if not responded to. The high protein diet, together with the judicious use of vinegar in the diet or hydrochloric acid, assists materially in the control of the violent peristalsis. For some ten years we have used a preparation consisting of whole dried ground pig stomach, duodenum and jejunum. This, together with hydrochloric acid, provides a basic program of treatment. I have been told by many clinicians and research workers that in their hands these stomach and intestinal extracts, with the introduction of Lysozyme, have proved of no value. In my opinion it would be difficult to take care of a patient with a so-called irritable colon, colitis or anal pruritus without them.

Much effort has been expended in trying to isolate a specific organism to which this

baffling syndrome could be attributed, but most of the studies have been disappointing. All of us are aware of the accompanying mesenteric adenitis and the processes involved with perforation. Fistulas may occur, extending to the base of the mesentery, and then drain into the peritoneal cavity and cause peritonitis and all too frequently the patient's death. We are also well aware of the insidiousness and persistence of the staphylococcus and the streptococcus.

Nutritional anemia is always present. Iron deficiency is frequently present also, causing hypochromia and microcytic anemia. The deficiency may be due either to excessive loss of iron from the body, as in cases of chronic hemorrhage, or to an inadequate quantity of the element in the diet. This becomes a difficult replacement problem. I have come to look upon iron, given in almost any form, as a "filed-up tenpenny nail" that causes marked mechanical irritability and often excessive bleeding. I have had some success replacing iron with whole dark dried fruits, such as raisins, figs, dates, prunes or apricots.

Protein deficiency, though in itself a less common cause of anemia, is not infrequently a contributing factor, but replacement is fairly easy and satisfactory. Lack of vitamin C or certain factors of the B complex, such as ribroflavin, nicotinic acid and folic acid, are important items. Five hundred mg. of vitamin C is given daily in most instances. Vitamin C is not stored; consequently, large doses are in order. Failure to utilize the specific antianemic factor may occur, though this appears to be rare. This type of anemia, of course, is treated as usual, and vitamin B12 seems to be definitely a necessity. The adrenal cortical steroids have been an extreme disappointment; in many instances in my own practice, they have been distinctly determental. Severe, hard-to-control hemorrhage has seemed to result from Cortisone therapy, though this is difficult to prove. ACTH in well regulated doses has been helpful, although the accompanying oversecretion of cortisone has produced some manifestations similar to those of adrenal cortical hypofunction. ACTH is much easier to use, though its influence on salt and water balance, alkalosis and neuropsychiatric reactions must be borne in mind. It is unquestionably extremely valuable in control of such remote manifestations as iritis and complications involving the skin and the joints.

The troublesome and insidious staphylococcus strains are usually sensitive to Tetracycline and Erythromycin.

One of the greatest disturbing factors in colitis in my own practice has been the use of milk in large quantities, particularly by the young. The great American habit of not weaning babies when they have acquired their teeth, has in a sense boomeranged upon us. Milk as as a beverage is omitted from the hospital diet. Most of the patients we see are milk drinkers. The other animals, guided by nature's dictum, do not by any means follow man's direction. As soon as they get their teeth, the mother weans them, whereas we put our babies on cow's milk. If our human mothers had to provide the milk used by our milk drinkers, they would settle the question once for all; but that is another story and does not bear too much discussion. Suffice it to say that there are a great number of allergens present in milk that are not tolerated by the patient with colitis.

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portant information is assembled that is helpful in feeding him.

An important item in the nutritional management of the patient with colitis is the certainty or the uncertainty which exists when they are fed. For many years these patients were tube-fed various formulae from a Kelly flask, sometimes under pressure. James Barron has recently devised a splendid motor-driven appliance, that permits such a patient to be fed "around the clock," if this is desirable. A small polyethylene tube is placed in the stomach, making it possible to give the patient 2,500 to 5,000 calories per day, including medication. He improves rapidly and maintains a far better electrolyte balance when fed by way of the intestine, even though it is not receptive and often in a state of discharge.

If the disease cannot be influenced to a satisfactory remission, then one must consider surgical treatment as the ultimate solution. Ten years ago, the mortality rate of ileostomy and colectomy was about 20 per cent. With the advent of antibiotics, modern anesthesia, adequate supplies of blood and well-trained surgeons, it has been reduced to a point well under 4 per cent. Ever mindful of the psychogenic factors involved, my colleagues and I are reluctant to give the colitic patient an ileostomy or a colectomy and proctosigmoidectomy until all other measures have failed. We fully realize that we already have a crippled patient, and we are aware that ileostomy may add to his misery.

If operation is necessary and the patient is a young man in whose case anastomosis with the upper part of the rectum is not feasible, we implant the stump in the pelvic floor, in order that his sexual functions may be observed.

For many years we have focused our attention on the rectal segment. Much effort has been spent in cleaning up the inflammatory manifestations at the distal end of the bowel — ulcerations, fistulas (simple and complex, e.g., rectovaginal), polypi and perforations. Almost none of these badly infected rectal segments can be salvaged and trusted with the responsibility of functioning as the ileal outlet. A considerable number of them, however, can be salvaged and used to substitute for an ileostomy. Good judgment and experience are necessary at this point, since a failure is disappointing to all concerned and can be disastrous. It was my pleasure to visit Lawrence Abel in London during the summer of 1956, and in our discussion of colitis and colectomies, he urged me to anastomose the ileum boldly to the diseased, scarred, inelastic rectum, if there seemed any opportunity at all to avoid an ileostomy. He is assembling a most interesting set of statistics and will no doubt show us that we have not been bold enough. His experience coincides with mine, but perhaps I have been less courageous.

The rectal segment is usually narrowed and scarred and has little, if any, mucosal lining. It can, however, be manually dilated from below over a period of time, and from above at the time of operation. Instillations of aqueous Zephiran and sulfa preparations are helpful. We use a carefully executed two-layer anastomosis, employing interrupted cotton sutures. It is surprising and gratifying to note how well these segments do and how pleased the patients are. Time and statistics will determine just how courageous one can be.

Surgical intervention is considered when one's medical program fails and when the bowel has become inelastic, scarred and denuded, or when pseudopolyposis develops. Many colons with pseudopolyposis will function well for years with about three to four stools daily. One could do no better with colectomy, with the ileum anastomosed to the proximal portion of the ileum. A program of watching and waiting cannot be condemned, although one must realize that pseudopolyposis and frank polypi arising on an inflamed bowel wall from granulation may undergo malignant degeneration. Chronic intractable colitis with invalidism severe enough to interfere with gainful employment dictates elective colectomy.

Surgical intervention becomes urgent and may be graded according to the severity of the acute complications. Ileostomy of the "hit and run" type can be carried out very well with local anesthesia, if necessary. The usual indications are perforation, pericolic or perirectal abscesses, peritonitis, obstruction or the so-called fulminating phase with a rapid downhill course. Ileostomy and or colectomy are in order if a persistent acute hemorrhage is encountered or if neoplastic change is suddenly detected. If a septic course persists in spite of antibiotics and supportive measures, the colon must be eliminated.

Many technical variations and combinations may be employed. Ileostomy alone may be resorted to in severe cases when the patients cannot tolerate one-stage colectomy. The purpose is to divert the fecal stream completely and reduce contamination of the peritoneal cavity. If a little time can be gained for rehabilitation of the patient, the other procedures, such as ileostomy with colectomy and proctosigmoidectomy or colectomy with ileoproctostomy, may be carried out. At times it is advantageous to perform ileostomy and colectomy and preserve the rectum for a future ileoproctostomy, if time is necessary to reclaim the rectal segment.

These experiences and conclusions are submitted as possibly worth consideration. I am convinced that it is advisable for the surgeon to act as his own internist and psychiatrist, though it is not always easy or feasible to do so. Certainly the psychogenic factors, not excluding sex behavior, should be recognized. The patients are puzzled, confused and easily disappointed, and they present fatigue syndromes most difficult to handle. Management in the manner outlined, is wearing on the physician but is his most satisfactory course, since he is the opposite type of person and has a remarkable reservoir of ability to carry responsibility, not only for his own problems but for those of others. I permit my patients with colitis to call me at any time, day or night, if they are in distress, and only on a few occasions has the privilege been abused.

Still more work must be carried out in this field, of course, before more than a very few of the answers to this problem are apparent.

LYNN A. FERGUSON,
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GRAND RAPIDS, MICHIGAN

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When we investigate clinically some disease, or some manifestation of it, we may be seriously handicapped by circumstances; but we are possessed of the certain knowledge that what we study is precisely what we set out to study.

Lewis

New Books

Books Received.—The following books have been received by the Editor; they will be reviewed critically as space and facilities permit. Omission of more extended review, however, is not to be taken as criticism of the merit of the book.

Lymphatics, Lymph and Lymphoid Tissue. By Joseph Mendel Yoffey and Frederick Colin Courtice. Cambridge, Mass.: Harvard University Press (for the Commonwealth Fund), 1956. Pp. 510. Illustrated.

Handbook of Physical Therapy. By Robert Shestack. New York: Springer Publishing Company, Inc., 1956. Pp. 212.

Atlas of Tumors of the Nervous System. By H. M. Zimmerman, Martin G. Netsky and Leo M. Davidoff. Philadelphia: Lea & Febiger, 1956. Pp. 191, with 277 illustrations (233 in color).

How to Enjoy Good Health. Edited by Cyril Solomon and Brooks Roberts. New York: Random House, 1956. Pp. 240.

Head Injuries and Their Management. By Francis Asbury Echlin. Philadelphia: The J. B. Lippincott Company, 1956. Pp. 127, with 16 illustrations.

Clinical Urology. By Oswald Swinney Lowsley and Thomas J. Kirwin. Baltimore: The Williams and Wilkins Company, 1956. 2 volumes, profusely illustrated; drawings by William Didusch.

The Stress of Life. By Hans Selye. New York: McGraw-Hill Book Company, Inc., 1956. Book V. Pp. 324.

Anesthesia for Surgery of the Heart. By Kenneth K. Keouri. Publication 304, American Lecture Series. Springfield, Ill.: Charles C Thomas, Publisher, 1956. *Reviewed in this issue.*

Operative Surgery. Edited by Charles Rob and Rodney Smith. London: Butterworth & Co., Ltd.; Philadelphia, F. A. Davis Co., 1956. Vols. 1 and 2 of 8 (plus index). Profusely illustrated. *Reviewed in this issue.*

Le Diagnostic du Cancer d'Estomac a la Période Utile (Diagnosis of Cancer of the Stomach at the Time Most Favorable for Treatment. By René A. Gutmann. Paris: G. Doin et Cie, 1956. Pp. 257. *Reviewed in this issue.*

L'Hemispherectomie (Hemispherectomy). By E. Laine and Claude Gros. Paris: Masson et Cie, 1956. Pp. 134, with 31 illustrations. *Reviewed in this issue.*

Anatomie Chirurgicale des Hernies de l'Aine (Surgical Anatomy of Inguinal Hernia). By Henri Fruchaud, with the collaboration of André Leca and Paul René Bréger. Paris: G. Doin et Cie, 1956. *Reviewed in this issue.*

Lesions of the Cervical Intervertebral Disk. Edited by Michael E. DeBakey and Barnes Woodhall. Springfield, Ill.: Charles C Thomas, Publisher, 1957. Pp. 134, with 41 illustrations.

Le Diagnostic du Cancer D'Estomac a la Période Utile (Diagnosis of Cancer of the Stomach at the Time Most Favorable for Treatment. By René A. Gutmann. Paris: G. Doin et Cie, 1956. Pp. 257.

The author emphasizes the importance of making early diagnosis of carcinoma when it is amenable to operation. He describes three types of early carcinoma of the stomach; mucosal, submucosal, and "small cancer" (less than 1 cm. in diameter). Attention is called to the fact that the classic symptoms of gastric carcinoma may be entirely absent during the early stages, and in many such instances the patient's complaints are attributed to ulcer or dyspepsia. In some instances carcinoma develops over a long period of years. The patient's age is no great factor in its development.

The chapter on roentgenologic study (written by Mme. le Docteur Jacqueline Daoud) covers 126 pages and is illustrated by many diagrams. Diagnostic points are discussed in detail. The author states, contrary to current opinion, that roentgenographic diagnosis of early carcinoma of the stomach can be made in many instances. She describes the technic she considers essential for proper visualization. Fluoroscopic study is of no value except to verify what has already been demonstrated by properly taken roentgenograms. She describes the roentgenographic appearance of the infiltrating, ulcerative and fungating types of gastric carcinoma. There are numerous instructive sketches.

Dr. Gutmann disagrees with the opinion that gastroscopic study is important in the diagnosis of early carcinoma, but concedes that it is useful in confirming a diagnosis already established roentgenographically.

In the chapter on supplementary methods of diagnosis he mentions laparoscopic study, which, in his opinion, has little value. It does, however, confirm the presence of late carcinoma with metastatic involvement of the liver and peritoneum, at which stage the lesion is inoperable.

In summarizing the chapter on cytologic study (written by Prof. Laumonier) the author states that, while it may be an interesting method, it has little value in diagnosing early carcinoma, since it has not yet been sufficiently developed to be accurate.

There is little relation between gastritis and early carcinoma, but late carcinoma may be secondary. The author discusses precancerous lesions: ulcer, gastritis and the polypi accompanying pernicious anemia. He is convinced that any recurring gastric disturbances should be considered serious until otherwise diagnosed.

Dr. Gutmann stresses repeatedly the importance of well-taken roentgenograms and their proper interpretation in the diagnosis of early carcinoma of the stomach, which is often overlooked. He records his wide experience in its diagnosis and treatment. The text includes 155 illustrations, and there is an additional group of 348 more, all well done. There is a summary in English at the end of each chapter, which will facilitate the reading of this book.

Charles Pierre Mathé, M.D.

L'Hemispherectomie (Hemispherectomy). By E. Laine and Claude Gros. Paris: Masson et Cie, 1956. Pp. 134, with 31 illustrations.

This monograph is based on the authors' experiences during the past five years with 39 hemispherectomies. In 32 instances the procedure was carried out because of encephalopathy and in 7 because of tumor. There was an extensive angioma in 1 of the encephalopathic patients and thrombosis of the internal carotid artery in another. In the remaining 30 the encephalopathy dated from early in life.

The surgical technic is thoroughly described and well illustrated. The advisability of preserving the basal ganglia is thoroughly discussed, and the postoperative studies are thorough and well organized. Selection of cases, operative indications and contraindications, preoperative studies [illegible] e ther results are all thoroug [illegible] d.

moencephalographic study is properly considered an essential preoperative measure in cases of encephalopathies. The authors emphasize the fact that cerebral hemiatrophy without convulsions or behavior disturbances but with mental retardation is not suitable for hemispherectomy.

This important study should be carefully read by everyone interested in hemispherectomy, whether he be pediatrician, neurologist or neurosurgeon. Because of the excellent description of the surgical technic it should be especially important to the surgeon who is beginning work in this field.

HAROLD C. VORIS, M.D.

Anatomie Chirurgicale des Hernies de L'Aine (Surgical Anatomy of Inguinal Hernia). By Henri Fruchaud, with the collaboration of André Leca and Paul René Bréger. Paris: G. Doin et Cie, 1956.

The authors point out that, in spite of the great strides made in modern surgery, the surgical treatment of hernia is not entirely satisfactory. This volume is limited to the anatomic aspects of inguinal hernia. Prof. Fruchaud has also published a volume on the surgical treatment, which will be reviewed at a later date.

There are reproductions of classic statues to demonstrate the external anatomic aspects of the inguinal region, stressing the difference between the athlete and the less muscular person. The classic anatomic pictures of the inguinal and femoral canals are well presented, including descriptions by ancient and modern authors.

Part 2 is devoted to comparative anatomy of the inguinal region. The author states that the upright posture of man has caused changes in the inguinal region, as it has influenced other parts of the anatomic structure. Prof. Fouchard points out that, in order to study hernias properly, the patient must be examined in the upright position.

Part 3 deals with the anatomic structure of the inguinal region as studied in various planes. The author points out that "there are few regions of the human body that present as many anatomical variations as does the region of the inguinal canal." He describes these in detail.

Part 4 discusses the physiological and mechanical factors that protect this region from intra-abdominal pressure. The classic belief that the inguinal canal is solidly protected against intra-abdominal pressure and that it seems little menaced by this pressure is incorrect. In fact, the inguinal region is very poorly constructed. Instead of being a marvel of nature, it has only precarious protection, and intra-abdominal pressure in addition to the ordinary stress of everyday life tends to weaken the supporting structures by slowly forcing the adjacent peritoneum into the inguinal region, forming a hernial sac.

Part 5 deals with the pathologic and surgical anatomic background and theories of the formation of hernia, including the Prof. Fruchaud's ideas about pathogenesis.

The authors state that, in the adult, hernia has its origin in a peritoneal depression that extends into the internal inguinal ring. These essentially deep peritoneal protrusions which predispose to inguinal hernia cannot be repaired surgically in the usual manner. They require total exposure of the inguinal region and complete removal of the peritoneal depression (described in Prof. Fruchaud's volume on surgical treatment).

This text is an excellent study of the anatomic, physiologic, etiologic and mechanical characteristics of inguinal and femoral hernia. It is divided into five parts, has 237 beautiful illustrations (by Arnold Moreaux), and 700 references, including the original articles of Bassini and Scarpa. It is a volume well worth reading.

CHARLES PIERRE MATHÉ, M.D.

Operative Surgery. Edited by Charles Rob and Rodney Smith. London, Butterworth & Co., Ltd.; Philadelphia, F. A. Davis Co., 1956. Vols. 1 and 2 of 8 (plus index). Profusely illustrated.

It is especially gratifying to welcome a new manual of surgical procedures when a large part of its success is evidently due to its simple approach and strictly limited objectives. Such are the virtues of this unusually simplified presentation of the standard, well-established surgical procedures, built upon excellent step-by-step illustrations of major and minor aspects of surgical technic.

The editors have designed this set as a companion to *British Surgical Procedures* to which they refer the reader for more extended treatment of surgical topics. Aside from some general advice they have omitted detailed discussion of such crucial subjects as diagnosis and investigation, preoperative and postoperative care and clinical and pathological data.

It is their view that visual experience is superior to the written description; hence their decision to base their book on a set of semischematic drawings. Accordingly, they have reduced the text to a minimum; it consists for the most part, of explanation of the illustrations.

A further major policy has been to invite contributions by specialists for each of the various regions of the body and the various fields of surgery. Although requested to cover the common variations in technic, the contributors have been asked to concentrate especially on those which they personally prefer from their own experience. The authority thus gained is of course essential to the main purpose of this work, which is to supply information on procedures not fully familiar to the general or special surgeon working in an unfamiliar field. It is likewise of inestimable advantage to the postgraduate surgical student or the resident in surgery. In this reviewer's opinion this feature will even prove valuable to the experienced specialist, who might not ordinarily be expected to require such a manual but might on occasion care to review the informed preferences of the contributors, so conveniently recorded in these pages.

From these several points of view *Operative Surgery* is a superior ready reference, one that should find a place among the more popular surgical standbys. It is sincerely hoped that the remaining volumes will appear without undue delay.

R. L.

Anesthesia for Surgery of the Heart. By Kenneth K. Keouri. Publication 304, American Lecture Series. Springfield, Ill.: Charles C Thomas, Publisher, 1956.

A new and difficult surgical field as seen through the eyes of an anesthesiologist is presented by the author of this compact volume. Success in this difficult field is achieved only through the efforts of a closely knit, smoothly functioning team of doctors. Here mutual respect and frank discussions in the selection of patients as well as in the problems attending the surgical, medical and anesthesiologic management of patients strike the keynote.

In concise and easily readable form, the author provides pathophysiologic information, disease states, laboratory data, mortality statistics for various procedures, as well as his own techniques of anesthesia management for various procedures. This small volume will be an asset not only to the fledgling or practicing anesthesiologist but to the library of every hospital, physician and medical student, regardless of the latter's special interests or stage of training.

David Katz, M.D.

> To be possessed of a vigorous mind is not enough, the prime requisite is rightly to apply it. The greatest minds, as they are capable of the highest excellences, are open likewise to the greatest aberrations; and those who travel very slowly may yet make far greater progress, provided they keep always to the straight road than those who, while they run, forsake it.
>
> —*Descartes*

Abstracts from Current Literature

ABO Blood Groups and Disease. Buckwalter, J. A.; Wohlwend, B.; Colter, D. C.; Tidrick, R. T., and Knowler, L. A., J.A.M.A. 162:1210, 1956.

Editors' Abstract.—"The existence of an association between certain diseases and the ABO blood groups was investigated by studying the blood-type frequencies of 158 patients with pernicious anemia, 908 with gastric carcinoma, 1,839 with peptic ulcer, 866 with carcinoma of the breast, 395 with carcinoma of the lungs, 256 with carcinoma of the colon and rectum, 456 with leukemia, 327 with congenital anomalies, and 184 with ulcerative colitis, and comparing them with the bloodtype frequencies observed in blood donors. The strongest association found concerned peptic ulcer; statistically significant associations also were found for gastric carcinoma and pernicious anemia. Patients with pernicious anemia were distributed between groups A and O in the ratio 1:0.78, while the control patients exhibited the ratio 1:1.10. So great a difference in a sample of this size would have been found as an accident of sampling less than 5 times in 100, and is therefore accepted as significant. The incidence of gastric carcinoma was also greatest in persons with blood type A; that of peptic ulcer was greatest in persons with blood type O. The data suggested, but did not suffice to prove, an association of blood group with pulmonary and mammary carcinoma. No evidence was found of association with carcinoma of the colon and rectum, leukemia, ulcerative colitis, or congenital anomalies."

HENRY J. ROSEVEAR, M.D.

Anterior Approach for Bilateral Adrenalectomy. McKeown, K. C., and Ganguli, A., Brit. M. J. 1:1466, 1956.

A long curved transverse epigastric incision with its convexity upward provides the best exposure for bilateral adrenalectomy, according to McKeown and Ganguli. Further advantages of the anterior route are that bilateral oophorectomy through a lower midline incision may be done as a preliminary procedure if desired after which both adrenal glands can be removed through the epigastric incision without changing the patient's posture at any time during the operation. Since these patients are prone to alarming changes of blood pressure during postural changes on the operating table, this benefit has considerable importance.

Exposure and delivery of the adrenal glands are described in detail, with particular reference to the fascial and peritoneal reflections intimately concerned. This technic permits accurate visual control of the vascular supply to each gland.

The anterior approach for bilateral adrenalectomy is contraindicated when there are extensive peritoneal secondary growths or when portal obstruction is present.

THOMAS WILENSKY, M.D.

Antibiotic Support of Colon Anastomoses. Cohn, I., Jr.; Langford, D., and Rives, J. D., Surg., Gynec. & Obst. 104:1, 1957

In a previous study the authors had demonstrated that postoperative antibiotics would protect a devascularized colonic anastomosis in an unprepared animal. The present study was undertaken in an attempt to establish the importance of preoperative mechanical cleansing of the colon in healing.

A controlled experiment was devised, with a longer (7 cm.) stretch of devascularized colon adjoining the anastomosis. The results indicated that preoperative mechanical cleansing does permit devascularization of a longer segment of colon adjacent to an anastomosis than is possible with an unprepared colon. A further important observation derived from this study was that the postoperative intraluminal injection of antibioics provided additional protection for a colonic anastomosis in the presence of adequate preoperative mechanical cleansing.

After healing, the devascularized colon is indistinguishable from the normal, which suggests that only the mucosa degenerates in these experiments, regeneration proceeding from its normal edge toward the anastomosis.

THOMAS WILENSKY, M.D.

Sex Hormone Excretion After Bilateral Adrenalectomy and Oophorectomy in Patients with Mammary Carcinoma. Strong, J. A.; Brown, J. B.; Bruce, J.; Douglas, Mary; Klopper, A. I., and Loraine, J. A., Lancet 1: 955, 1956.

The excretion of sex hormones by a postmenopausal patient before, during and after bilateral adrenalectomy and oophorectomy are described in this study, in detail and very commendably.

It is concluded that the small amount of hormone excreted by such a patient after an operation was not derived from adrenocortical tissue.

None of the patients responded to intravenous infusion of corticotrophin. The pattern of hormone excretion in patients who responded favorably to the operation did not differ from that in patients who showed no improvement after the removal of both adrenals and ovaries.

EDMUND LISSACK, M.D.

The Behavior of Carcinoid Tumors of the Intestinal Tract. Spain, D. M., Am. J. Gastroenterol. 26:162, 1956.

Carcinoid tumors may occur in any area of the gastrointestinal tract, involving the stomach and rectum on occasion. It is estimated that 1 per cent of all gastrointestinal tumors are carcinoids. Those examples of carcinoid that run a benign course cannot be differentiated on histologic grounds from those which infiltrate and ultimately metastasize. Carcinoid tumors are frequently malignant, but long survival in the presence of metastases is not uncommon. Benign carcinoid tumors may produce a variety of manifestations as a result of local involvement of the intestinal tract; e.g., obstruction, intussusception, diarrhea, hemorrhage, pain and loss of weight. It is estimated that from 80 to 95 per cent of all carcinoids are located in the region of the ileocecal valve; the most frequent site in the small intestine is the ileum. A biopsy specimen of rectal carcinoid may be mistaken for carcinoma, or may reveal no tumor cells because of the deep submucosal type of growth. A current concept is that all carcinoid tumors must be regarded as potentially malignant.

The syndrome associated with malignant carcinoid consists of predominantly right-sided valvular endocardial fibrosis, a peculiar type of cutaneous telangiectasia, cyanosis and blushing secondary to vasomotor changes and asthma-like symptoms due to bronchoconstriction. The substance responsible for this syndrome is believed to be a 5-hydroxytryptamine, regarded as a specific hormone of the enterochromaffin cell system and also elaborated in great quantities by carcinoid tumors. It is also present in the urine of patients with metastatic carcinoid. This is used as a diagnostic test. This substance is believed to be responsible for the attacks of flushing, the skin manifestations and the occasional asthmatic attacks that may occur in this syndrome. Attempts to reproduce the endocardial lesions experimentally in rabbits with 5-hydroxytryptamine have so far failed.

J. RICHARD MOORE, M.D.

Some Aspects of the Mechanics of the Abdomen. Adno, J., South African M. J. 30: 535, 1956.

This interesting and stimulating paper represents the results of the author's probings into the vast unexplored field of knowledge pertaining to the mechanics of the abdomen and the abnormalities that may result, at least in part, from disturbances and failures of the mechanical forces considered.

In order to record intraperitoneal, intragastric and intraurinary vesical pressures the author utilized a polythene catheter filled with physiologic solution of sodium chloride and an electrical strain-gauge attached to an amplifier and a recording unit. The readings were accurate, and a record of the slightest variation was readily obtained. With this apparatus the author was able to refute the generally held impression that the intra-abdominal pressure is negative. By this means he was able to demonstrate that the intraperitoneal pressure is positive except for a low-pressure area immediately beneath the diaphragmatic leaflets. In this area the pressure is closely related to that within the thorax, which is generally negative.

The author has further considered the extremely important pumping activity of the diaphragm and its responsibility in maintaining continuous circulation of the intraperitoneal fluid.

He has furthermore attempted to prove his strongly held impression that the abdominal walls are immensely important elastic components of the overall abdominal mechanical arrangement and has sought to relate their disturbances to various clinical signs and syndromes—para-lytic ileus, acute dilatation of the stomach, uterine prolapse and displacement, enterocele, hernia, abnormal defecation and micturition, esophageal regurgitation and dysphagia. He has made many additional interesting speculations similar to these.

Hiatus hernia, uterine prolapse and the "pot-belly" of the middle-aged man are all, in his opinion, due to increased intra-abdominal pressure, which is largely the result of increased deposition of omental and visceral fat plus progressive stretching and weakening of the related muscle groups due to aging, lack of tone and, in the case of the pelvic floor, previous trauma.

The author concludes by stating the opinion that there is much to be gained clinically with better understanding of the mechanics of the abdomen, including, most importantly, the diaphragm and the muscular abdominal wall. The author is not satisfied that the part played by the rectus muscles and the other flat muscles of the abdomen, with respect to postural and space-altering abdominal movements, is clearly understood and that, with the diaphragm, the possibility of an ambivalent nerve supply to the muscular abdominal wall should be studied.

THOMAS WILENSKY, M.D.

Histologic Changes Produced in the Non-Malignant Thyroid Gland by Therapy. Fink, R. J., Southern M. J. 49:1440, 1956.

This paper is a concise description of the histologic changes effected in the thyroid gland by various drugs and by roentgen therapy.

The action of iodine and that of the thiourea derivatives are briefly described.

Itrumil (5-iodo 2-thiouracil) has been reported to have a different effect on the toxic gland, owing to the incorporation of iodine into its molecule. This compound, which was originally reported to have no goitrogenic effect, has been recently demonstrated to have considerable goitrogenic effect, with increased cell height, vascularity and discharge of colloid.

The effect of roentgen rays on the thyroid gland in cases of hyperthyroidism has been variously reported. Involutional changes with occasional atypical cells have been noted. Larger doses of radiation may produce acute necrosis, follicular atrophy and marked fibrosis.

Toxic or normal glands treated with radioactive iodine (I^{131}) may show some of the changes of necrosis, atrophy and fibrosis. Glands so treated and removed more than six months after treatment have shown a high incidence of changes similar to those observed histologically in cases of Hashimoto's disease.

Thyroiditis, because of its obscure classification, has proved difficult to evaluate with regard to the effects of treatment.

ACTH and cortisone proved most active in producing acute involution, since the enlargement is usually due primarily to lymphocytic infiltrate and follicle formation. The same agents have been reported to produce some improvement in cases of acute nonsuppurative thyroiditis (subacute thyroiditis).

THOMAS WILENSKY, M.D.

Results of Treatment of Cancer of the Breast. Watson, T. A., Surg., Gynec. & Obst. 104:106, 1957.

In this study of the treatment of carcinoma of the breast therapeutic policy for operable tumors was radical mastectomy and postoperative roentgen therapy.

The series is claimed to show a superior crude five-year survival rate.

It is demonstrated in this series that, provided the published data on the survival rate of untreated mammary carcinoma are representative, treatment is favorably influenced in the course of the disease.

EDMUND LISSACK, M.D.

Carcinoma in the Medial and Lateral Halves of the Breast. Pierce, E. H.; Kirklin, J. W.; McDonald, J. R., and Gage, R. P., Surg. Gynec. & Obst. 103:759, 1956.

In this study, 416 cases of carcinoma in the breast were studied. In 364 the lesions proved to be adenocarcinomas; in 41, comedocarcinomas; in 10, Paget's disease, and in 1, liposarcoma.

The breast was the site of the lesion in 43.3 per cent; the medial half in 30.3 per cent, and the lateral half in 61.5 per cent. In the remaining 8.2 per cent the tumors were centrally located.

The five-year survival rate for the entire group was 61 per cent: lateral tumors 62.9 per cent, medial tumor 58.7 per cent and centrally located tumors 54.5 per cent.

Patients with lesions located in the lateral half of the breast and with axillary metastases showed a five-year survival rate of 42.1 per cent. Without axillary metastases the five-year survival rate was 82.3 per cent.

EDMUND LISSACK, M.D.

Advanced Mammary Cancer Treated with Sex Hormones. Lewison, E. F., and Trimble, F. H., J.A.M.A. 162:1429, 1956.

Although the sex hormones are certainly not a "cure" for advanced mammary carcinoma, in the total care of this disease they do offer profound and gratifying care and benefits for patients beyond the scope of surgical and roentgen therapy. The authors considered themselves justified in using the initial palliative benefits of hormone therapy before considering the more drastic operative procedures, such as adrenalectomy or hypophysectomy.

One hundred and thirty-three patients were given 233 complete courses of sex hormone therapy for advanced mammary carcinoma. The choice between estrogen and androgen was made principally in relation to the physiologic age of the patient in reference to the menopause. Estrogens were used only after five years had passed since the menopause, whereas androgens proved useful to both premenopausal and postmenopausal patients. For elderly patients, however, estrogen appeared to be the hormone of choice.

EDMUND LISSACK, M.D.

I have mentioned good humor as one of the preservatives of our peace and tranquility. It is among the most effectual, and its effect is so well imitated and aided, artificially, by politeness, that this also becomes an acquisition of first rate value. In truth, politeness is artificial good humor, it covers the natural want of it, and ends by rendering habitual a substitute neatly equivalent to the real virtue.

—*Jefferson*

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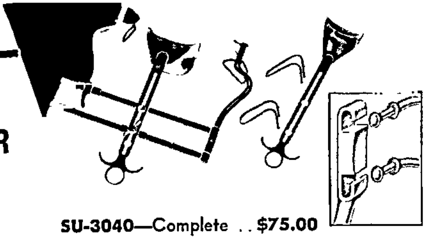

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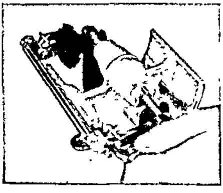

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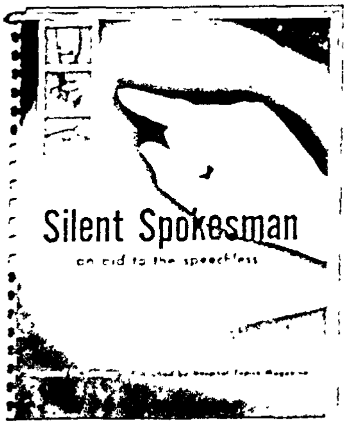

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Vol. XXVII MAY, 1957 No. 5

General Surgery

Degastroenterostomy

JOSEPH E. BELLAS, M.D., F.A.C.S., F.I.C.S., D.A.B.
PEORIA, ILLINOIS

DEGASTROENTEROSTOMY — removal of a gastroenterostomy—is an operation that ought to be obsolete, but until the results of gastric operations attain a level of 100 per cent effectiveness, it will behoove surgeons to retain an intimate familiarity with this procedure.

Indications.—In discussing degastroenterostomy, one must assume that gastroenterostomy has been done for peptic ulcer, real or phantom. Degastroenterostomy consists of removing an existing gastroenterostomy for the following indications: (1.) malfunction of the anastomotic stoma, (2.) secondary peptic ulcer occurring at or about the stoma, or (3.) gastrojejunocolic fistula.

1. Malfunction of a gastroenterostomy includes (a) vicious circle, (b) a contracted stoma with gastric retention and (c) a wide open stoma without vicious circle complications, without secondary peptic ulcer but with gastric retention.

In most instances the cause of malfunction can be traced to an improper indication for the operation or improper performance of the anastomosis. Occasionally, however, despite proper indications and performance, patients have disturbing symptoms due to gastric retention, regardless of an open stoma and the absence of secondary peptic ulcers. This condition was formerly known to surgeons as "gastroenterostomy disease" for lack of a better name. I suppose that the disturbance is associated with imbalance of the neuromuscular apparatus of the stomach, but I confess that this may be just an-

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Read before the Illinois Surgical Society, Galesburg, Aug. 25, 1956, the Illinois Chapter of the American College of Surgeons, Belleville, Sept. 29, 1956, and the North Central Illinois Medical Association, Princeton, Nov. 18, 1956.

Submitted for publication Feb. 11, 1957.

other way of saying that nothing is known of the cause.

In any event, a surgical operation must be performed as soon as possible. If a circulus vitiosus is present, the degastroenterostomy should be removed and a revision of the anastomosis performed, so that the food will leave the stomach by the efferent rather than the afferent loop. This procedure might be quite justifiable if the patient had an obstructive peptic ulcer or if vagotomy and gastroenterostomy had been performed for the original peptic ulcer.

a. If the original operation was done for an unconfirmed ulcer with no other pathologic change, degastroenterostomy with suture of the stomach and jejunum is sufficient.

b. For a contracted stoma, revision of the stoma and the addition of vagotomy or degastroenterostomy and gastric resection may be done.

c. For so-called "gastroenterostomy disease" in a patient with a previously demonstrated peptic ulcer but without demonstrable pathologic change on exploration, the management preferred degastroenterostomy and formal gastric resection.

2. It is well known that in 15 per cent of patients with peptic ulcers (usually duodenal), for which gastroenterostomy has been performed, secondary peptic ulcers develop at or about the stoma. The result is a condition more serious than the original lesion. Some surgeons do a vagotomy to correct this condition; others, probably a majority, prefer to do a degastroenterostomy and follow it with a formal 70 to 75 per cent gastric resection. There is no purpose in applying medical treatment except to prepare the patient for surgical intervention.

3. The third indication for this procedure is gastrojejunocolic fistula. This condition is an extension of the disease process that follows the development, as a complication of secondary peptic ulcer in a previously existing gastroenterostomy. Perforation of an adherent jejunal ulcer into the colon gives rise to this rather unusual and devastating condition. Many factors require attention and consideration in the management of this pathologic entity, but there is general agreement that there is no palliative or effective medical treatment. Surgical intervention is the only hope. It must include separation of the gastrojejunal stoma and the jejunocolic fistula, with reconstruction of the jejunum or colon and the performance of a formal 70 per cent gastric resection.

REPORT OF CASES

CASE 1.—A man aged 48 first consulted me on Dec. 28, 1948, because of a perforated duodenal ulcer with massive hemorrhage. A McNealy tamponade of a bleeding duodenal ulcer was done; it was followed by an anterior gastroenterostomy and a vagotomy. The lesion was an obstructing callous ulcer in the first portion of the duodenum.

After the operation, an insulin gastric analysis showed complete absence of free hydrochloric acid; temporary diarrhea developed. Clinical improvement was obvious from the start, but some discomfort in the right lower portion of the abdomen developed a year later. There were episodes of postprandial gas, borborygmi and abdominal distention, which were attributed to the vagotomy. A gastrointestinal roentgenographic recheck showed a well-functioning anastomotic stoma with no gastric retention and no evidence of jejunal ulcer.

The patient apparently progressed reasonably well for four years thereafter, during which there were no observations. He then appeared with moderate symptoms of hematemesis and of blood in the stools three weeks after the development of epigastric pain, nausea and vomiting. He was hospitalized, and an exploratory operation was done. Adhesions were separated in and around the anastomosis. Only the scar of the old duodenal ulcer could be found. The stoma was examined through a gastrotomy incision, but I found a perfectly open stoma with the afferent and efferent loops in good relation and no evidence of a secondary peptic ulcer. At that time I did not consider a radical procedure justifiable, and the operation was completed by closing the gastrotomy wound.

For the next year the patient complained of occasional stomach trouble, characterized principally by belching. Toward the latter part of the year there were recurring attacks of pain in the right upper part of the abdomen, accompanied by belching and flatulence. The patient had occasional diarrhea and lost weight. Roentgen studies of the upper part of the gastrointestinal tract showed unexplained 40 to 50 per cent retention of gastric contents (Fig. 1).

Gastric resection was recommended and undertaken. A degastroenterostomy, reconstruction of the jejunum and a gastric resection with an anterior end-to-side gastrojejunostomy were done (Fig. 2). No sign of the original duodenal ulcer or a secondary jejunal ulcer could be found. No mechanical cause was seen for the malfunctioning gastroenterostomy. In the postoperative period, considerable time elapsed before the patient had stabilized himself so as to drink and eat without regurgitation. I do not know what the final outcome of this case will be, but since August 1, 1955, the patient has remained stabilized.

CASE 2.—A man aged 61 presented himself on Nov. 30, 1954, with the following symptoms: (a) loss of 40 pounds (18.1 Kg.) in the preceding five months; (b) change of bowel habits (he had formerly been constipated, but for the past four months, his stools had been watery, light and frequent; sometimes the food, such as milk, sausage, celery, olives and green vegetables, would go through unchanged); (c) poor appetite, frequent vomiting and fetid belching in the past four months, and (d) progressive loss of strength and energy.

The most significant thing in his history was an operation performed at the Mayo Clinic thirty years earlier for "ulcers and gallbladder." In the years that followed the patient's initial relief gave way to recurring complaints of gastric distress. It was relieved somewhat by antacids, but in recent months these had failed to relieve him. He had maintained a fair degree of occupational usefulness until five months prior to consulting me.

Physical examination revealed the patient to be tall, depleted and cachectic, with a dispirited, resigned attitude. Apart from the presence of an old paramedian scar over the right upper portion of the abdomen, however, nothing of significance was discovered.

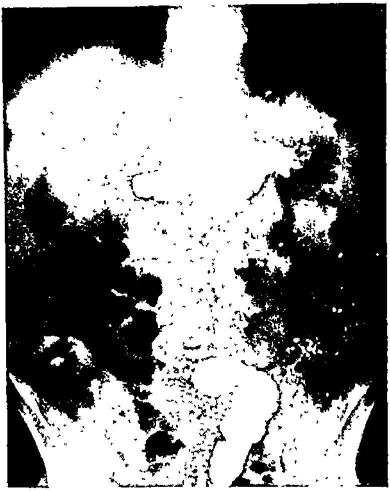

Fig. 1.—Roentgenogram showing 40 to 50 per cent five-hour retention of gastric contents.

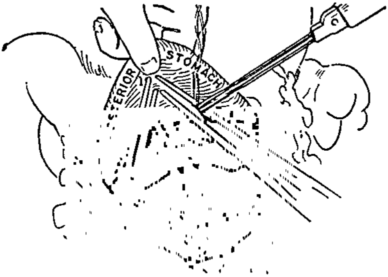

Fig. 2.—Approach to degastroenterostomy by a shallow V resection between clamps at the expense of the stomach. (After Pfeiffer.)

Because of the change in bowel habits, a roentgen study of the colon was done first. The roentgenographic appearance suggested that an upper gastrointestinal roentgeno-

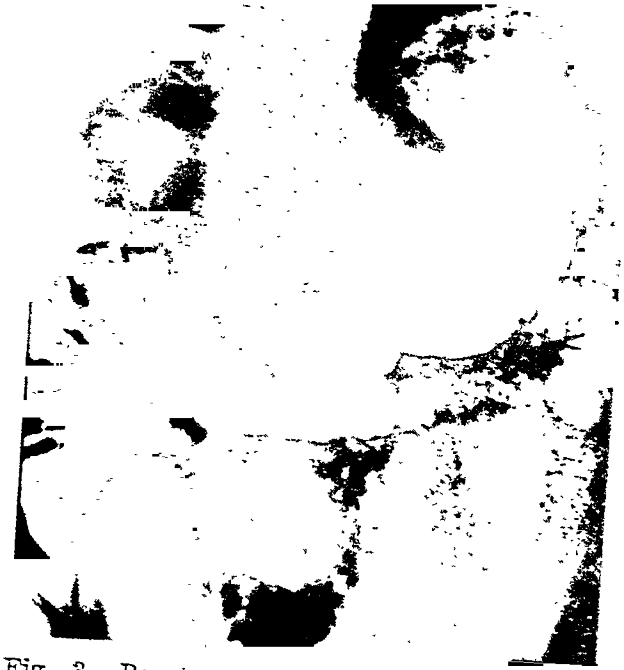

Fig. 3.—Roentgenographic appearance after a barium enema in a case of gastrojejunocolic fistula.

graphic series had been done, as the stomach was excellently filled and the barium was plentifully distributed from the stomach to the rectum (Fig. 3). Although a gastrointestinal roentgen study was done later and confirmed the observations, the diagnosis was already clear—gastrojejunocolic fistula.

Management. — Management presented a number of problems. The patient obviously had severe hypoproteinemia, advanced hypovitaminosis and a disturbed fluid balance due to inability to absorb his nourishment. For the same reason, hemoconcentration was present.

After those factors had been reasonably controlled, surgical intervention offered him his only hope.

Choice of Procedures.—Several procedures could be considered:

1. Degastroenterostomy, separation of the jejunum and the colon with suture of each viscus and a later gastric resection.
2. Resection of the transverse portion of the colon, the jejunum and the stomach *en bloc* in one stage and reanastomosis of the jejunum and the colon.
3. Lahey's ileodescending colostomy followed by a later stage consisting of resection *en bloc* of the stomach, the jejunum and the right half of the colon to the distal third of the transverse portion.
4. Pfeiffer's three stage operation:
    - Stage 1 Ascending double-barreled colostomy.
    - Stage 2 Degastroenterostomy. Separation of jejunocolic fistula; reconstruction of the jejunum and transverse portion of the colon; gastric resection and end-to-side gastrojejunostomy.
    - Stage 3 Closure of ascending colostomy by Mikulicz' spurcrushing technic.

Of these four methods, I chose the Pfeiffer method, because I consider it the safest. True, more time must be allowed for completing the three stages. In this instance it took seven months (Fig. 4).

Operation in Stages.—The importance of the double-barreled ascending colostomy cannot be overestimated. This procedure diverts the fecal current completely away from the gastrojejunocolic fistula.

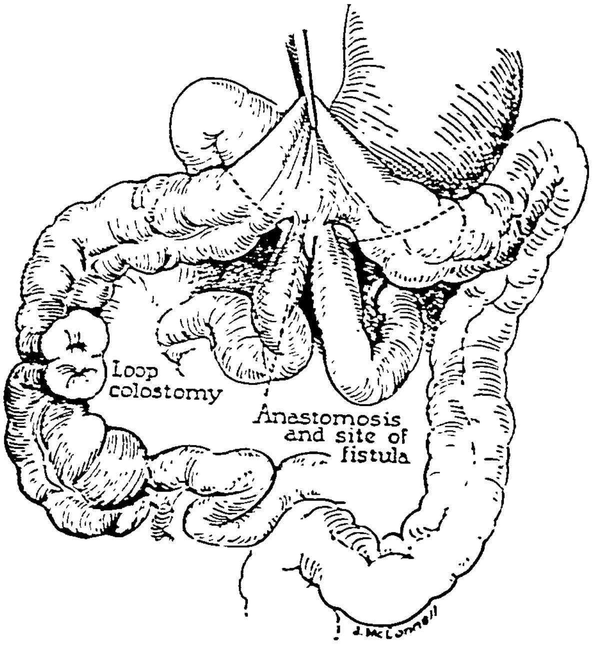

Fig. 4.—Double-barreled ascending colostomy constituting first stage in repair of gastrojejunocolic fistula. (After Pfeiffer.)

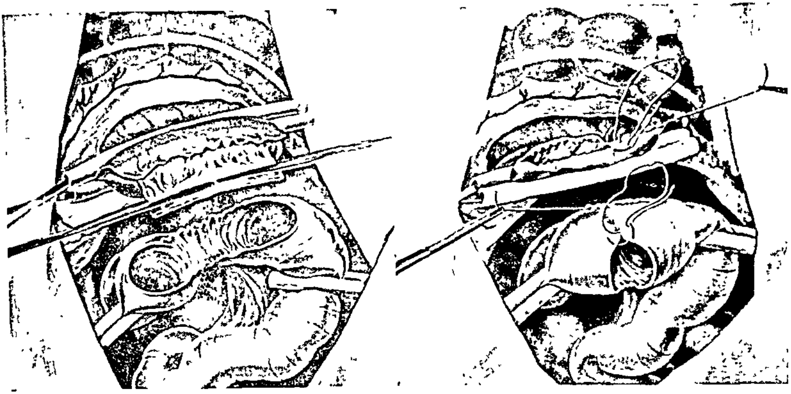

Fig. 5.—*Left,* degastroenterostomy and excision of gastrojejunal stoma. *Right,* reconstruction of jejunum. (After Spivack.)

This maneuver, coupled with the use of Upjohn's mycifradin, which sterilizes the *intestinal contents, permits the inevitable* inflammatory reaction around the fistulas to subside materially. During the interval of three or four months before the second stage, this patient lost his toxic feeling and appearance and began to believe that there was some hope. The presence of the colostomy is admittedly a nuisance during the entire course of the management, but it must be borne. A course of mycifradin was given for three or four days before the second stage.

In the second stage one will encounter many adhesions in and around the fistulas, and they must be reduced so that one can identify the abnormal fistulas. This is particularly difficult if a retrocolic gastrojejunostomy has been done, as in this case. I noted that the location of the gastrojejunal anastomosis is most easily found and its disengagement most readily performed if one enters the lesser peritoneum through the gastrohepatic omentum first. The attachment of the transverse mesocolon to the stomach must be separated, with constant awareness that *the middle colic artery must not* be injured. Manipulation, from above as well as from below the transverse mesocolon, will keep one more conscious of the relations and will reduce this hazard. The stomach above the anastomosis is divided between two crushing clamps so as to liberate the gastrojejunal anastomosis, still attached to the jejunum, at the expense of the stomach (Fig. 2).

The site of the jejunocolic fistula is then cleared of adhesions, and two series of clamps are placed in wedge-shaped fashion over the transverse portion of the colon on each side of the fistula beyond the limits of palpable induration. The defect in the transverse portion of the colon is then sutured in a transverse direction. Because of the diversion of the fecal current by the ascending colostomy and the sterilizing effect of the mycifradin, one need not fear contamination (Fig. 4).

The jejunal loop is then opened, and the areas of the gastrojejunal [illegible]

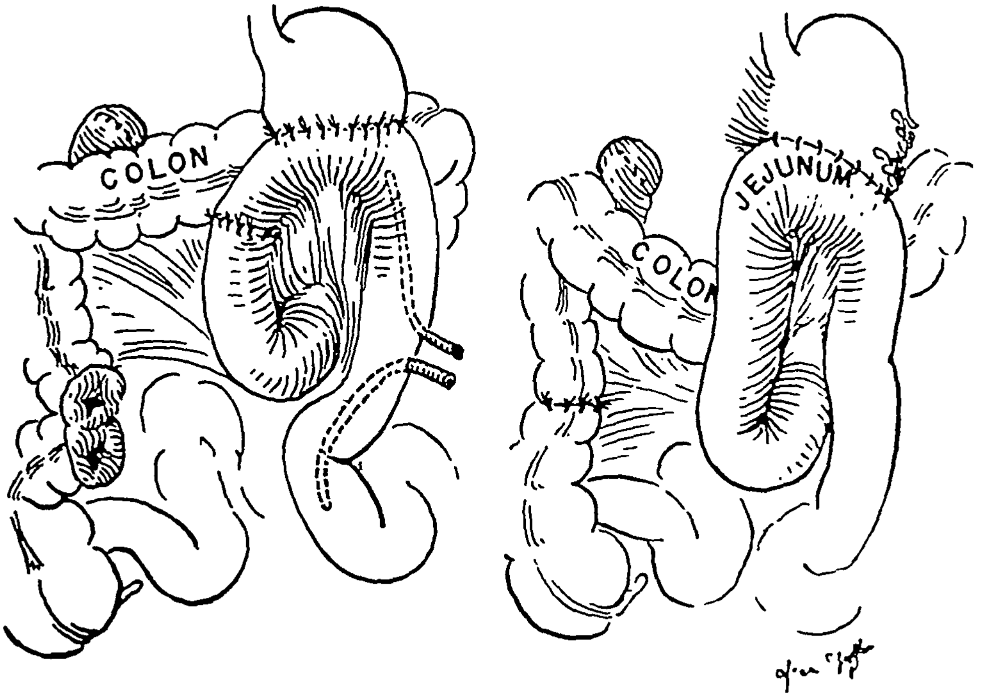

Fig. 6.—*Left,* gastric resection; antecolic end-to-side gastrojejunostomy (Hofmeister); inversion of duodenal stump; jejunostomy. *Right,* closure of double-barreled ascending colostomy after Mikulicz' spur-crushing procedure. (After Pfeiffer.)

and the jejunocolic fistula are excised. As a general rule, the mesenteric portion of the jejunal wall can be preserved and the defect in the jejunum can be sutured transversely so as to obtain a wide lumen (Fig. 5). At times, however, resection of the jejunum, with an end-to-end anastomosis, must be done (Fig. 6, left).

After completion of this step, a standard gastric resection is done with division and suture of the duodenum ¾ inch (1.9 cm.) beyond the pylorus. It is followed by an antecolic Hofmeister end-to-side gastrojejunostomy with the proximal portion of the stomach (Fig. 6, right).

The Levine suction tube is removed on the fifth postoperative day. In this instance the patient was discharged on the twelfth day. About five weeks later spur crushing of the double-barreled colostomy was done, and six weeks thereafter the colostomy was closed so as to restore continuity of the bowel. The incision fortunately healed by first intention. The subsequent progress of the patient was remarkably gratifying. He regained his weight rapidly and one year later was back at his regular work as a crane operator.

SUMMARY

Degastroenterostomy — removal of a gastroenterostomy—is an important part of an overall procedure seeking to cure (a) malfunctioning anastomotic stoma, (b) a secondary peptic ulcer occurring at or about the stoma, or (c) a gastrojejunocolic fistula.

Factors in management and the principles of treatment are outlined. Possible procedures, the choice among them and their relation to 2 reported cases are discussed. The details of degastroenteros-

tomy and of the Pfeiffer multistage method for gastrojejunocolic fistula are described.

RÉSUMÉ

La dégastro-entérostomie est une partie importante de la thérapeutique des affections suivantes: a) mauvaise fonction d'un stoma anastomique; b) ulcère peptique secondaire au niveau du stoma; c) fistule gastro-jéjuno-colique.

Les facteurs et les principes du traitement sont exposés. Le choix des procédés est discuté à l'appui de deux cas. Description des détails de la dégastro-entérostomie, et de la technique en plusieurs temps selon Pfeiffer pour la fistule gastro-jéjuno-colique.

SUMARIO

A degastroenterostomia—a remoção de uma gastroenterostomia — é um método importante para solucionar:

a) a disfunção de um stoma anastomótico; b) uma ulcera péptica secundária que se tenha estabelecido no ou em volta do stoma; c) a fístula gastro-jejuno-cólica.

Os fatores relativos ao tratamento e seus principios são apresentados no trabalho. São discutidos os metodos em relação aos dois casos. Pormenores da degastroenterostomia e o método de estagios múltiplos de Pfeiffer para a fístula gastro-jejuno-colica são descritos.

ZUSAMMENFASSUNG

Die Degastroenterostomisierung, d.h.die Entfernung einer Gastroenterostomose, bildet einen wichtigen Teil eines Gesamteingriffes, der die Heilung der folgenden Krankheitszustände zum Ziel hat:

a) Fehlerhafte Funktion der Anastomosenöffnung.

b) Sekundüres peptisches Geschwür an oder in der Nähe der Anastomose.

c) Gastrojejunokolische Fistel.

Die Einzelheiten und die Grundsätze der Behandlung werden umrissen. Die Möglichkeit der Auswahl unter verschiedenen Massnahmen wird erörtert und an Hand von zwei Fällen erläutert. Die Einzelheiten der Degastroenterostomisierung und der Pfeifferschen Behandlungsmethode der gastrojejunokolischen Fistel in mehreren Stadien werden beschrieben.

RIASSUNTO

La degastroenterostomia, cioè la demolizione di una gastroenteroanastomosi è il tempo principale di qualunque metodo diretto a curare (a) uno stoma non funzionante; (b) un'ulcera recidiva sull'anastomosi e (c) una fistola gastrodigiunocolica.

Vengono elencati i metodi e le loro basi, gli elementi di scelta del tipo di intervento e i rapporti con i due casi presentati. Viene descritto l'intervento di degastroenterostomia e il metodo in più tempi, di Pfeiffer per la cura della fistola gastrodigiunocolica.

RESUMEN

La degastroenteroanastomosis ó extirpación de una gastroenteroanastomosis, es una parte importante de un procedimiento que persigue la curación de: a) un estoma que no funcione; b) úlcera péptica secundaria cerca ó en el estoma; c) fístula gastrojejuno cólica.

Se enumeran los factores que influyen en el manejo de estos casos y sas principios. Se discute la selección de los procedimientos y su relación a dos casos reportados. Se describen los porryenores de la degastroen teroanastomosis y del método de Pfeiffer envarios tiempos para el tratamiento de las fístulas gastrojejuno cólicas.

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Dr. Max Thorek, Editor
Journal of the International
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Dear Dr. Thorek:

I have read the article by Dr. Longacre and his collaborators, entitled Repair of Defects of the Skull with Autogenous Tissue and published in the March issue of the Journal.

On page 324 in this article, the authors state that "Scott and Wycis reported a failure rate of 18 per cent when stainless steel was used for cranioplasty." The authors give as a reference for this statement a paper published by us in 1946 in the Journal of Neurosurgery. This article is entirely on the experimental use in animals and makes no references whatsoever to any results in its use in humans.

In February, 1951, we did publish our results on Stainless Steel Cranioplasty in humans in the Journal of the International College of Surgeons, Vol. 15, No. 2, p. 161. We reported our experience in 22 cranioplasties and found the material to be eminently satisfactory and at that time 1/300 as expensive as tantalum plate. The incidence of plate removal was 9 per cent.

Finally, in September, 1956, we published further follow-up studies on stainless steel cranioplasty in the American Journal of Surgery, Vol. 92, No. 3, p. 393. In this report, we gave our results on a series of 46 stainless steel cranioplasties in man, 27 of which were followed five years or more. Again we found the material satisfactory and considerably cheaper than tantalum or acrylics, and our incidence of plate removal was 6.5 per cent, which compares favorably with the 8 per cent incidence of tantalum plate removed in a series of 128 tantalum cranioplasties reported by Lewin and others.

Sincerely,

Michael Scott, M.D.

Studies of the Use of Glyco-Algin as a Solution for Transfusion

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SAPPORO, JAPAN

THE transfusion of fluids is administered mainly to achieve two ends: first, to restore the water deficiency of the body, and second, to supplement nutritional deficiencies. In addition, transfusion is employed to treat shock induced by severe trauma or major operations, and also as a blood substitute or an expander of plasma volume. In other words, various fluids are administered by transfusion to chronically dehydrated patients preoperatively, during operation and postoperatively, especially when the amount of blood required for transfusion is not available in cases of unsuspected great emergency and/or when various nutrients must be supplied.

Hitherto saline solution, Ringer's solution and 5 per cent dextrose have been commonly used to restore body fluids. It has been revealed recently, however, that a limit exists to the amount of fluid administered and that saline solution causes a disturbance in water metabolism, influences the electrolyte balance and, above all, may be the cause of pulmonary edema and other dangerous complications. To counteract these, Darrow's solution, Dextran and other medicaments have been introduced. Nevertheless, the problem of fluid transfusion has become more urgent with the progress of operative technic and the increase in the number of operations performed.

With the foregoing facts in mind, I have made chemically pure Glyco-Algin from sodium alginate, to be used in transfusions for dehydration, as a blood substitute and as a so-called plasma volume expander (Bowman).

These studies were begun in 1948 and completed in 1951.

Chemical and Biologic Properties of Sodium Alginate: Alginic acid, a polymer of a mannuronic acid, is chemically a polysaccharide and has a high molecular weight. Sodium alginate has a colloidal property, is soluble in water and has high viscosity. The structure of alginic acid is shown in Figure 1.

Glyco-Algin is prepared by dissolving 0.3 per cent sodium alginate in 5 per cent dextrose solution. It is adjusted to maintain a specific viscosity of 2 and a molecular weight of 15,000. This is because polysaccharides of high molecular weight, such as Dextran, have an unfavorable influence on the living body; moreover, solution of sodium alginate alone has been verified as having a somewhat ill effect on hemotasis.

When mature rabbits were bled at the rate of 20 cc. per kilogram of body weight in six minutes, the blood pressure dropped rapidly. With the systolic pressure at 100 prior to bleeding, the changes of blood pressure appeared as in Figure 2. The rabbits were then given transfusions of Ringer's solution, dextrose solution, alginate saline solution and Glyco-Algin respectively, in an amount equal to the blood removed, and the results compared with data on groups that received no transfu-

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*Chief, Department of Surgery, Sapporo Medical School, Sapporo.

Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-13, 1956.

Submitted for publication Sept. 12, 1956.

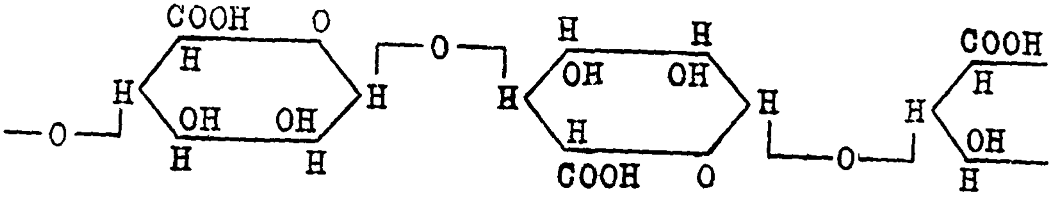


Fig. 1.—Structure of alginic acid.

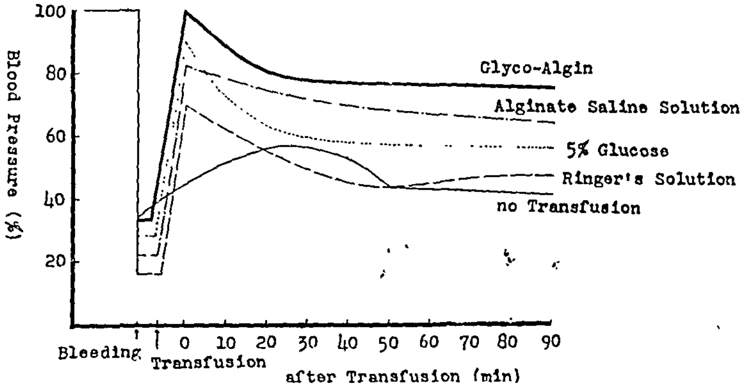


Fig. 2.—Changes in blood pressure.

sions. The results are shown in Figure 2.

The systolic blood pressure level rose 95 per cent after the transfusion of Glyco-Algin, and even after a ninety-minute lapse it was maintained at 80 per cent. Even when Glyco-Algin was transfused intravenously at a rapid rate (Fig. 3), respiration was normal in spite of the rise in blood pressure and no symptoms of colloidal shock were observed.

It can be said that Glyco-Algin has no undesirable effects on the living body. The ideal of transfusion is to increase the volume of circulating blood and the plasma volume without changing the level of extracellular fluids. With this in mind, each

Comparative Results

			After 20'		*After 60'*	
		Before (Cc./Kg.)	*Cc./Kg.*	*Rate of Increase (%)*	*Cc./Kg.*	*Rate of Increase (%)*
Ringer's solution	C.P.V.	31.3	32.0	2.2	26.6	15.0
	C.B.V.	44.8	44.6	4.4	36.6	18.9
	C.Z.V.	13.5	12.6	6.6	9.7	28.1
	E.F.	331			346	4.3
5% Glucose dextrose	C.P.V.	35.3	37.4	5.9	31.1	11.8
	C.B.V.	54:6	55.1	0.9	43.5	20.3
	C.Z.V.	19.3	17.7	8.2	12.4	35.4
	E.F.	344			350	1.7
Alginate saline solution	C.P.V.	38.3	41.9	9.3	36.4	4.9
	C.B.V.	58.7	60.1	2.3	49.8	15.1
	C.Z.V.	19.3	17.8	7.7	16.7	13.4
	E.F.	352			356	1.1
Glyco-Algin	C.P.V.	35.1	39.1	11.3	34.6	1.3
	C.B.V.	54.2	59.6	9.9	51.0	5.2
	C.Z.V.	18.7	20.1	7.5	16.4	13.4
	E.F.	344			340	0.5

solution was tested by the Evans-Blue and Crandoll-Anderson methods.

The results are listed in the accompanying table and illustrated in Figure 4.

In the case of Ringer's solution, the circulating blood volume and especially the circulating plasma volume showed a marked decrease twenty minutes after the transfusion.

The reactions produced by dextrose were more or less the same. In my opin-

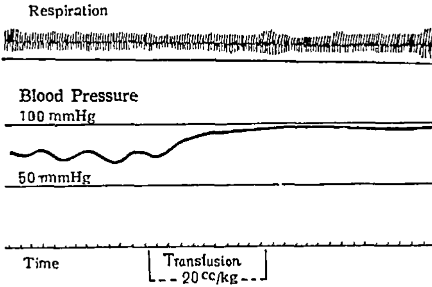
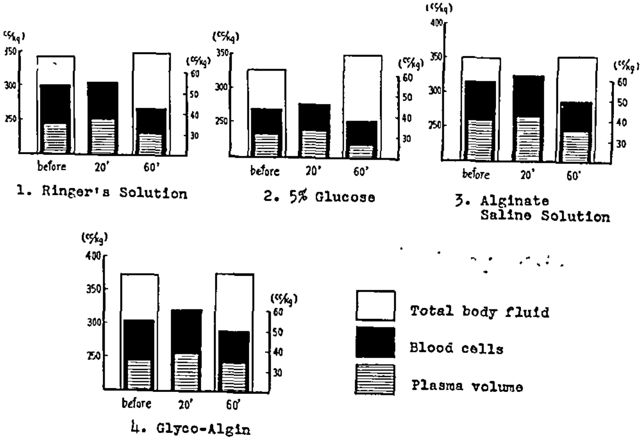


Fig. 3.—Effects of rapid intravenous transfusio



1. Ringer's Solution

2. 5% Glucose

3. Alginate Saline Solution

4. Glyco-Algin

Fig. 4.—Effects on circulating blood and plasma volume.

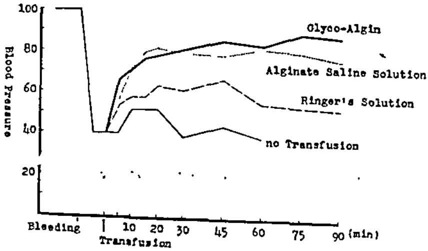


Fig. 5.—Effects of slow (drop) transfusion.

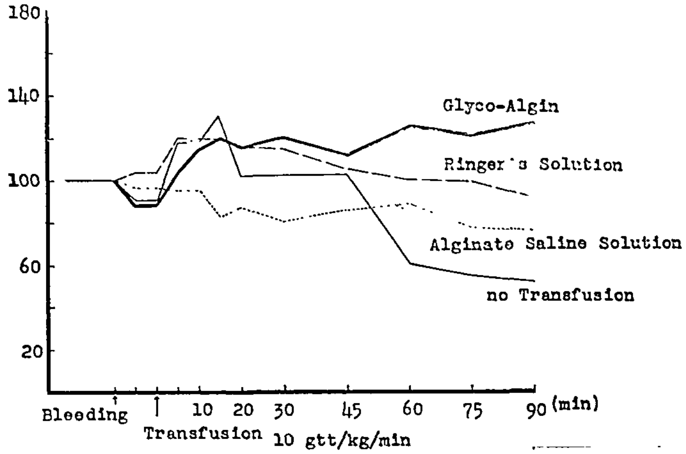


Fig. 6.—Results of myocardiographic study.

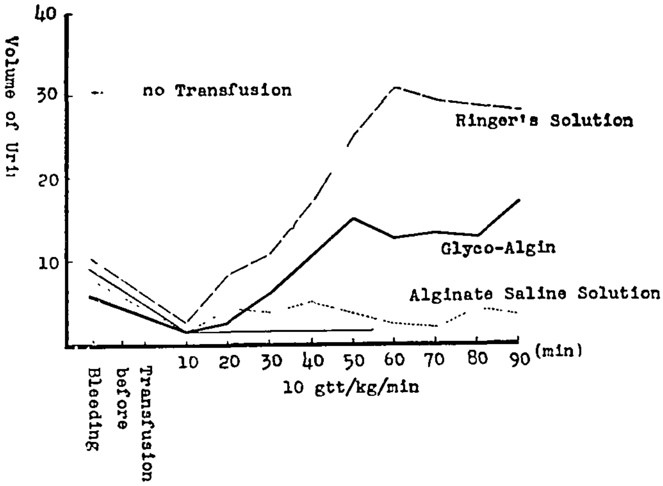


Fig. 7.—Effects on urine clearance.

ion, therefore, this solution is also, in some sense, harmful to the living body. In contradistinction to all the others, with Glyco-Algin an almost normal balance of body fluids is maintained. In other words, it can be said that if Glyco-Algin is used, the deficiencies of body fluids induced by bleeding are restored and adjusted almost to an ideal point.

The results of rapid intravenous transfusion have been described. Experiments with slow (drop) transfusion were next conducted and the results compared with those of rapid transfusion. Solutions were administered at the rate of 10 drops per kilogram of body weight per minute. The results are shown in Figure 5. It was clearly revealed that Ringer's solution does not and cannot raise the lowered blood pressure induced by bleeding. It was further revealed that, in order to raise and maintain the blood pressure, continuous slow transfusion of a solution such as Glyco-Algin is necessary. It should, however, be noted that extremely rapid transfusion (e. g., 40 minims per kilogram of body weight per minute) induces a fall in blood pressure as with other solutions. Even in the case of Glyco-Algin the rise in blood pressure is inhibited.

These experiments suggest important

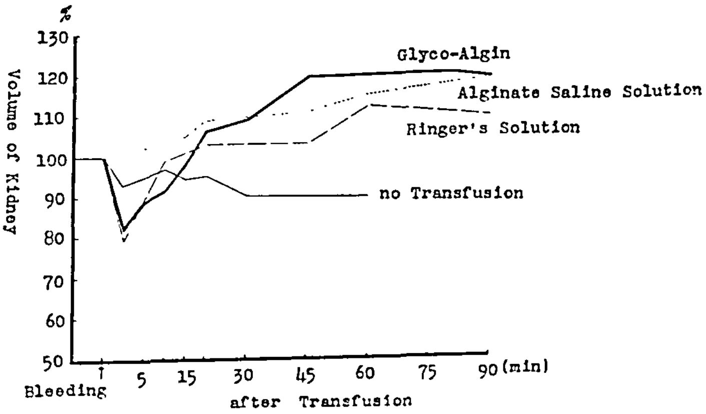


Fig. 8.—Enlargement of kidney with slow transfusion.

factors that may influence the problem of limitation of rapid transfusion.

These results were also verified by myocardiographic studies. While rapid transfusion adversely influenced the width of the myocardiogram, slow transfusion of 10 minims (Fig. 6) of Glyco-Algin, ninety minutes after bleeding, resulted in readings one and three-tenths as wide as those taken prior to bleeding, indicating efficient contraction of the heart.

The influence of Glyco-Algin transfusion on renal function is as follows:

1. Though the value for urine clearance increased gradually after transfusion of Glyco-Algin and returned to normal after twenty-four hours, the variation was within the normal physiologic range; hence it may be concluded that Glyco-Algin has no adverse influence on the kidney.

2. Though the output of urine decreases temporarily after bleeding, it gradually increases as transfusion is started slowly (10 minims; see Fig. 7) and is restored to normal after thirty minutes. In addition, a further increase was observed parallel with the transfusion of Glyco-Algin. When rapid transfusion was administered with alginate saline solution, anuria occurred after sixty minutes. Both Glyco-Algin and Ringer's solution tended to reduce the amount of urine, although a temporary increase was observed in the early stages.

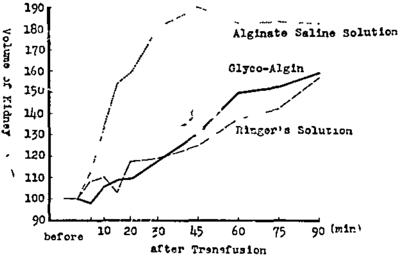


Fig. 9.—Enlargement of kidney with rapid transfusion.

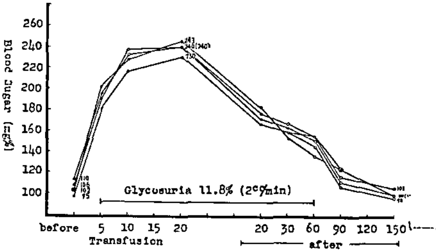


Fig. 10.—Effects on blood sugar level.

3. As to enlargement of the kidney, this was noted in all cases of transfusion. In the case of slow transfusion (10 minims) of Glyco-Algin a 10 to 20 per cent increase

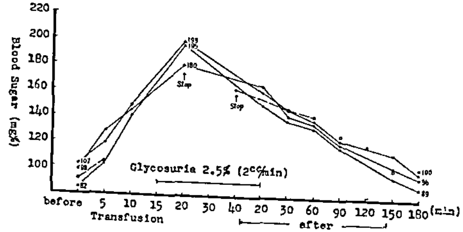


Fig. 11.—Comparative effects of Glyco-Algin and other transfusion fluids on blood sugar level in slow and rapid transfusion.

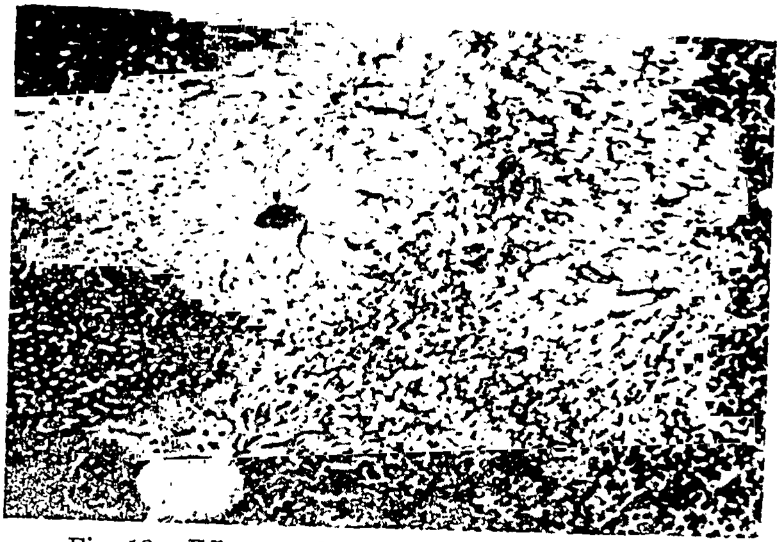


Fig. 12.—Effects on hepatic glycogen (Glyco-Algin).

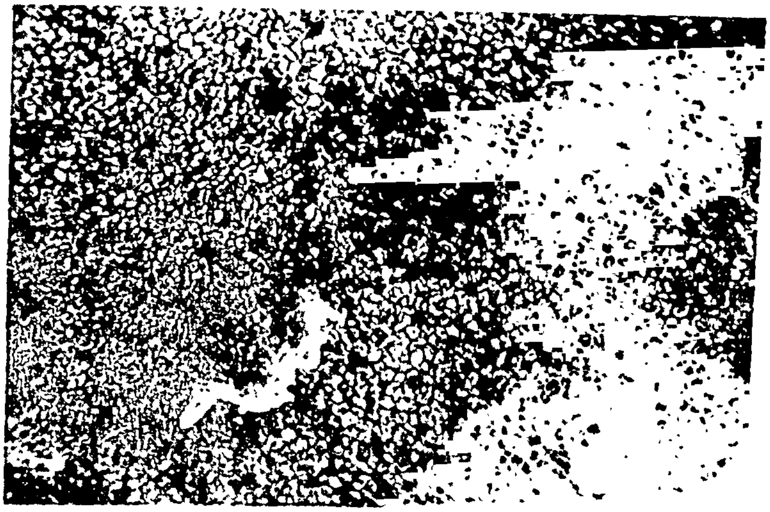


Fig. 13.—Effects on hepatic glycogen (alginate saline solution).

in volume was produced, almost the same as with the other solution (Fig. 8).

In rapid transfusion, however, the results were unfavorable (Fig. 9), especially in the case of alginate saline solution.

It might be necessary, therefore, to add that even with Glyco-Algin a too rapid transfusion may cause undesirable reactions. So I have to say that the limit of speed of transfusion of a polysaccharide such as Glyco-Algin is 10 minims per minute per kilogram of body weight. This limit, however, is equivalent to 600 cc. per minute in adults, so it is entirely negligible in clinical cases. This has been never said of the use of Dextran, etc.

Experiments were conducted to verify the extent of influence of transfusion on the sugar content of the blood, to determine the utilization of dextrose in the body and to determine whether or not the non-utilized glucose surplus dextrose is expelled into the urine.

1. When 2 cc. of dextrose solution per kilogram of body weight per minute was transfused (Fig. 10), the blood sugar content showed a remarkable increase and 11.8 per cent of the transfused dextrose

was expelled into the urine. In contrast, when 1 cc. per minute was transfused, hyperglycemia was minimized and the occurrence of glycosuria was rare.

2. When Glyco-Algin was used in rapid transfusions the blood sugar content was slighter than with dextrose transfusion (Fig. 11), and the amount of dextrose expelled was only 2.5 per cent of the transfused amount, which is but one-fifth of the former figure. With slow transfusion of Glyco-Algin, no dextrose was observed in the urine.

As Dewes pointed out, it is well known that operations cause hyperglycemia accompanied by glycosuria. Since transfusions are frequently administered with operations, I have made observations on the combined influences of operation and transfusion on carbohydrate metabolism.

In the operative experiments rabbits were used. In Group 1 bleeding was induced; in Groups 2 and 3 the stomach and small intestine were crushed; then transfusions were given to the three groups and the results compared.

With dextrose transfusions 50 per cent or more of the transfused amount was expelled; with Glyco-Algin only two-thirds was expelled and the increase in blood sugar was negligible as compared with that following transfusions of dextrose solution. In spite of the fact that Glyco-Algin is a solution of sodium alginate and 5 per cent dextrose solution, it provides more de sirable effects and is utilized to a fuller

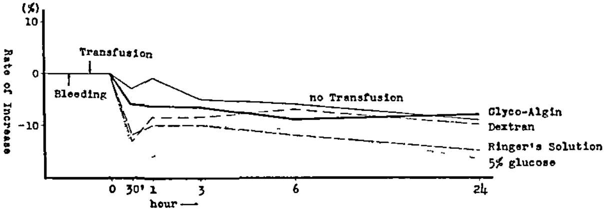


Fig. 14.—Effects of various supplementary fluids on hemoglobin content of blood.

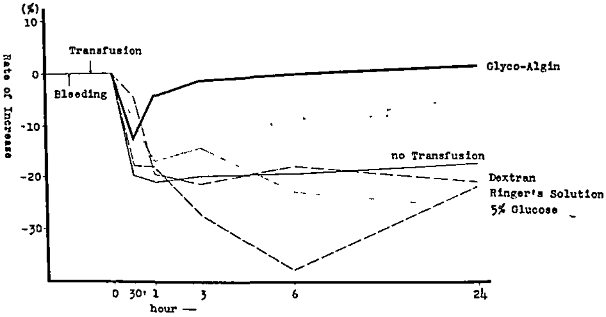


Fig. 15.—Effects on total hemoglobin volume of blood.

extent by the living body than is a simple dextrose solution. This fact has been verified clinically, with highly satisfactory results.

Histologic Picture. — The effect of Glyco-Algin on the main body organs was studied, with special reference to the following points: Will a large volume of Glyco-Algin cause pulmonary edema? Is there any danger of its blocking renal function? Is there a possibility that Glyco-Algin will cause damage to hepatic glycogen or lipoid metabolism? Will damage be caused to the hepatic parenchyma itself?

Glyco-Algin was administered to adult rabbits at the rate of 10 cc. per kilogram of body weight per four or five minutes through the otic veins. The same amount was administered three hours and twelve hours later. This was continued for seven days, and after a lapse of twenty-four hours the rabbits were killed. The lungs, liver and kidneys were removed and examined histologically.

In the control group, Ringer's solution and alginate saline solution was used.

1. *Lungs*: Only a slight expansion was noted in the blood vessels of the alveolar wall in the Glyco-Algin group and in a few of the control groups. In the stomach tissue only slight parenchymatic edema was noted.

2. *Kidneys*: Although a negligible thickening of the cortex in the Glyco-Algin groups and some of the controls, together with slight granulation of protoplasm and slight blurring of nuclear structure, was noted, nothing remarkable was noted in either the medulla or the cortex of the control.

3. *Liver*: Except for an occasional instance of arterial congestion, no notable observations were made.

With Ringer's solution, on the other hand, thirty minutes after administration, the hepatic lobular structure showed a foamlike transformation, causing the structure to lose its clarity. In addition, there was a slight shrinkage of protoplasm, followed by a slight blurring of its structure.

Next, the effects of Glyco-Algin on liver glycogen was studied by Hotchkiss's dye method. Three hours after administration only a negligible decrease in liver glycogen was noted (Fig. 12). In the case of alginate saline solution, however, the decrease of liver glycogen was remarkable, and only a very small number of granules were to be seen in the vicinity of the hepatic lobules. The results with Ringer's solution were between those observed with Glyco-Algin and alginate saline solution (Fig. 13).

In studying the effect on hepatic lipoids, it was noted that only a slight increase was seen after administration of Glyco-Algin, whereas in the case of both Ringer's solution and alginate saline solution a notable increase was observed. This was most remarkable in the star-shaped cells of the liver.

As a final experiment, comparisons with Dextran were made. Dogs were bled at the rate of 20 cc. per kilogram of body weight per minute, and various supplementary fluids were administered in equal volumes. The results are shown in Fig. 14. Though in outward appearance the influence of all transfused solutions on the hemoglobin count in blood was almost the same (Fig. 14), with Glyco-Algin the total hemoglobin volume of the blood increased with time and in approximately three hours returned to normal (Fig. 15). Moreover, this state continued for twenty-four hours. With the other three fluids, the hemoglobin volume does not increase. The same results were prominent in observations of the total erythrocyte count (Fig. 16), the total volume of plasma protein (Fig. 17), the total circulating blood volume (Fig. 18) and the total circulating plasma volume (Fig. 19).

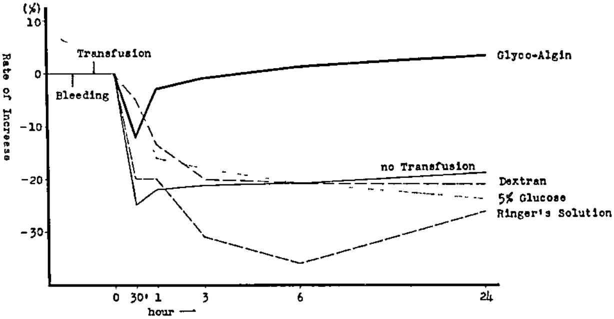


Fig. 16.—Effects on erythrocyte count.

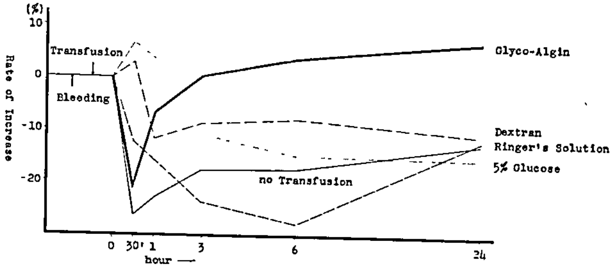


Fig. 17.—Effects on total protein content of blood plasma.

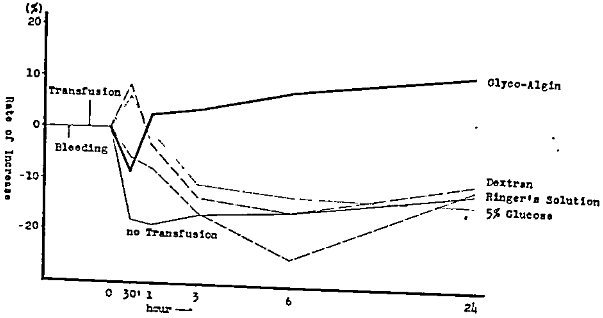


Fig. 18.—Effects on total circulating blood volume.

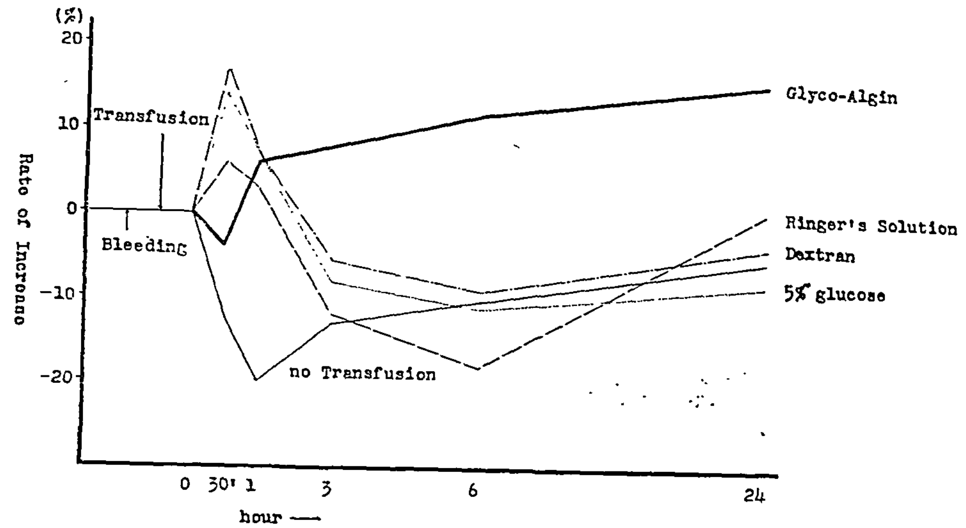


Fig. 19.—Effects on total circulating plasma volume.

In the case of Dextran and dextrose, immediately after transfusion a temporary rise of blood and plasma volume was observed (Figs. 18 and 19). After a lapse of three hours, however, the increase diminishes and the volume reverts to a state similar to that of a subject not undergoing transfusion. These are entirely the same as the results observed by Bloom, who presented that only Dextran of larger molecular weight of 91,700 or more maintained the plasma volume for six hours. That polysaccharides of high molecular weight (over 20,000) have an undesirable influence on the living body, however, has already been verified. In other words, it is evident that Glyco-Algin alone is effective and almost ideal in every respect as an expander of plasma volume.

Next, according to experiments conducted to study the influence of the four fluids on the adrenal cortex, the following facts were revealed: With Glyco-Algin an increase of sudanophilic substance appears earlier and more remarkably than with the other fluids. The ketosteroid enlargement occurs earlier than with the other three fluids, and the return to the normal state is accomplished within twelve hours. The regressive *transformation of the* nuclei was observed to begin after six hours. With Dextran similar results were observed but the degree of ketosteroid enlargement was slightly lower. With Ringer's solution and dextrose the return to the normal state was delayed and was much weaker.

In addition, it was proved beyond doubt that transfusion of a large amount of Dextran lengthens the so-called prothrombin time. The same results were presented by Adelson and Ebert at the Sixth Congress of the International Society of Blood Transfusion in Boston, Sept. 3-5, 1956. Dr. Adelson remarked especially that the higher the molecular weight of Dextran the more marked the hemostatic defect, prothrombin consumption and thrombocytemia. That even Dextran of the molecular weight of 20,000 produced the hemostatic defect. The anaphylactic effect of Dextran, moreover, has been verified by Koster.

I am in receipt of about 300 reports on the use of Glyco-Algin in large hospitals all over Japan, including university hospitals, and it gives me great pleasure to say that all reports confirm my opinion that Glyco-Algin is invariably satisfactory, without one exception. It is also inexpensive. In my surgical clinic alone, 15 to 20 liters, equivalent to 30 or 40 bottles, of Glyco-Algin are used every day.

RÉSUMÉ

La "glyco-algine" est sous tous rapports une solution de transfusion quasi idéale: elle augmente et équilibre de façon satisfaisante la pression sanguine, elle reconstitue et maintient le volume circulatoire du sang et du plasma, et stabilise le volume des urineset le métabolisme des hydrates de carbone.

ZUSAMMENFASSUNG

Das Glyco-algin ist eine in jeder Hinsicht ideale Transfusionslösung, da es zu einer ausreichenden Erhöhung des Blutdruckes führt, den Blutdruck auf gleicher Höhe erhält, das Volumen des zirkulierenden Blutes und Plasmas wiederherstellt und erhält und die Urinausscheidung und den Kohlehydratstoffwechsel stabilisiert.

RESUMEN

Glyco-Algin es, desde todo punto de vista, una solución para transfusiones casi ideal, ya que aumenta y mantiene la presión arterial satisfactoriamente; restaura y mantiene el volumen circulante de sangre y plasma y estabiliza el volumen de orina y el metabolismo de los carbohidratos.

RIASSUNTO

Sotto ogni punto di vista la Glicoalgina è la migliore soluzione per infusioni in quanto aumenta e mantiene in maniera soddisfacente la pressione del sangue, ripristina e mantiene il volume del sangue circolante e del plasma, e stabilizza il volume di urina e il metabolismo dei carboidrati.

SUMARIO

O "Glyco-Algin" é, em todos os aspectos, um soluto quase ideal para transfusão, porque aumenta e mantem satisfatóriamente a pressão sanguinea, restaura e mantem o volume sanguineo círculante, o plasma e establliza o volume urinário assim como o metabolismo dos carbohidratos.

> There is a strength of body that comes from strength of soul, and this is genuine.
> There is a strength of soul that comes from strength of body, and this is spurious.
> —*Zangwill*

The Development of Operations for Hypospadias

Cure by Means of a Pedicled Graft from the Urinary Bladder

PAUL ROSENSTEIN, M.D.
SAO PAULO, BRAZIL

HYPOSPADIAS is a deformity brought about by deficient development of the urethra. As a result of this defective urethral formation persisting from the fetal period five different deformities of the external male genital apparatus may result:

1. The mouth of the urethra may open into the lower part of the glans, into the sulcus coronarius (hypospadias glandis).
2. It may open into the region of the pars pendulla of the penis (hypospadias of the penis).
3. It may open at the borderline between the penis and the scrotum (hypospadias peniscrotalis), where the genital folds of the sinus urogenitalis have failed to join.
4. It may open into the perineum in cases in which the genital furros failed to close completely (hypospadias perinealis).
5. Forms of pseudohermaphroditism may occur, which may create an erroneous impression because of the fact that, in cases of hypospadias, peniscrotalis and perinealis, the scrotum is also split to a varying extent.

The simplest form of deformity is the opening of the urethra into the lower part of the glans. Bouisson, in 1860, was the first to attempt correction of this deformity, severing the scar tract existing in the region of the lower surface of the glans. Duplay severed the subglandular tissue transversely and sutured the incision lengthwise. This procedure was conducive to success in cases involving few complications. Dodson divided Buck's fascia by a transverse cut, including all constricting fibers of the intravenous septum; the incision is sutured longitudinally. Poussen has stated that the severance of tissues at the foot of the penis is, not in itself, capable of eliminating the deformity of the glans. It would therefore be necessary to separate the glans from "both cylindrical caverns" through an incision, in order to free the penis entirely from its pathologic upward position. Bucknall, too, made a transverse incision in the first-stage procedure. Thompson-Walker made a circular incision around the external meatus, leaving a collar of skin around the opening, and prolonged the incision laterally on each side, so that it extended to one-third of the entire circumference of the organ. A longitudinal medial incision is made from this on the ventral surface of the penis for two-thirds of its length, to allow the necessary elongation. The

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method often used earlier, i.e., "pulling the urethra" through a canal made in the glans, with a pointed scalpel, originated with Thompson-Walker. Today hypospadias glandis can be cured by the creation of a new urethra. All operations aiming at correction of the original urethra by pull-through or relocation are obsolete, because no improvement is thereby made in the deformity of the penis.

A brief summary of the development of the hypospadias therapy and a description of a new method of operation, in which the urethra is replaced by means of transplantation of the mucous membrane of the bladder.

History.—Nove-Josserand, in 1897, used scrotal grafts for replacement of the deficient urethra. He used Thiersch graft lobes, which he transplanted into a canal of the pars pendula prepared in advance. About 1900, surgery made sensational progress in the field of tissue plastics. What was virtually a race, aiming at the best substitute for the deficient urethra, began at once. Creevy stated that scrotal skin was unsuitable for making a urethra, since hair grows into it, forming stones. Edmund then used skin from the prepuce, with success. Nesbit and also Davis used the skin from the dorsum of the penis, which they transplanted to the ventral surface. Some surgeons used skin from the penis as well as from the scrotum. Many satisfactory results were obtained, since the skin in this region is hairless, pliant and elastic. The use of pedicled skin grafts from the surrounding skin was attempted, but this was soon given up, since the skin of the prepuce was more easily available. Russell formed a tunnel of the skin of the prepuce and later pulled the glans through.

Free transplantations, which at one time were performed frequently, have been dropped altogether. A great many experiments have been made to transplant entire cavernous organs, such as the appendix, the ovarian tubes, or a vein; skin also has been used for making a new urethra, as well as Thiersch's lobes and the vagina. Good initial results were obtained with all this material, but this kind of transplant was absorbed and replaced with scar tissue. Masson used Thiersch's lobes with some success but encountered many failures due to disruption of the transplant by coagulated blood. Schieden, in 1919, was the first to use the urethra from another human being. Lexer, in 1911, made use of the appendix. In 1910, Tanton attempted to use a vein for transplantation and Legueu experimented with the *mucous membrane of the vagina.* He succeeded in making a canal but abandoned the method, as the vagina could not be adapted to the constitution of a urethra. All attempts at using extraneous material are doomed to failure since such transplants are biologically intolerable.

The most common operations used at present include:

Hamilton Russell's "stole" operation. This is performed in four stages, in which an incision is made through the frenum that binds down the penis, and the glans is tunneled with a tenotomy knife. Incisions are then made laterally in two lines; a strip of prepuce like a clergyman's stole is thus marked out, and finally the flaps forming the urethra are sutured. Davis uses the skin from the dorsum of the penis and adds the prepuce if needed. Ombredanne's operation is recommended by some surgeons. Bidder incises the ventral aspect of the penis on both sides, forming the urethra from the skin of the penis and the floor from scrotal skin. This operation is adequate for peniscrotal hypospadias. Denis-Browne uses the skin of the penis, which is supposed to possess, among other advantages, the quality of not forming keloids. In addition, he uses the skin of the prepuce. A perineal ureth[illegible]y is performed to by-pass the urine. The flap covering is provided for by a double folding of the prepuce, through which a hole is made for the passage of the glans. The preputial fold is then sutured to the inferior surface of the penis, which has been denuded by removal of the flap used to form the sac.

Cecil's operation, which is a modification of Bucknall's, has been used by many surgeons with some success. Lowsley and Kirwin make a double flap from the cutaneous surfaces adjoining the abnormal urethral orifice. The flaps are freed, brought up in the penis and arranged to form a sac at the extremity of the glans. Nesbit also employs the dorsal skin of the penis.

Edmund's operation is performed in three stages, spaced at intervals of three months. In the first stage a buttonhole is made in the preputial hood. The second stage consists of straightening the penis; finally, in the third stage, a new urethra is made from the tissues provided by the preputial horns and is covered with lax penile skin.

Modern surgeons have learned that for the success of a plastic operation certain conditions are indispensable. The tissues employed, after being placed in the position required, must not be subjected to any tension whatever. The graft employed must be well fed. This is of particular importance with regard to plastic operations on the urethra, because long grafts are often used and a blood supply for these must be secured with special care. Diversion of the urine is absolutely necessary until the new urethra has been completed. This is not accomplished by means of a catheter through the urethra but through either a cystostomy or a perineal urethrostomy. Postoperative bleeding should be kept at a minimum to prevent destruction of the suture line. The knots of the sutures employed must be tied on the outside of the urethra. The ideal age for plastic operations is from 4 to 10 years, since by that time the tissues have reached a certain degree of stability.

In view of the many and various procedures aforedescribed, a new method was sought for plastic operations on the urethra that would, in view of the type of tissue to be chosen, insure durability. It was important to choose a transplant that would transport urine physiologically. The urinary bladder itself was therefore chosen as the ideal tissue, since the bladder is an extraordinarily resistant organ that expands readily and regains its normal capacity even after strong shrinking. It is therefore possible to cut large pedicle grafts out of the vesical mucous membrane without seriously endangering the organ's function. In addition, the vesical wall is well supplied with blood; therefore, the blood supply to the pedicled graft is also insured.

REPORT OF CASES

CASE 1.—E. K., a boy 7 years of age, complained of dysuria, dribbling, incontinence and pronounced pyuria. Examination revealed multiple fistulous openings on the penis and scrotal hypospadias. The fistulas were due to earlier attempts to repair the hypospadias by surgical correction. The penis was edematous at the end and slightly rolled downward. Urination was frequent. When urinating, the boy stood up and strained, putting his hands on his abdomen and crying, and that the urine emerged from the various fistulous openings like water out of a garden sprinkler. Roentgenograms of the vertebrae revealed no abnormality. The remainder of the physical examination also gave normal results.

Operative Technic.—All lobulous residual tissue on the penile shaft remaining from the previous operations was radically eliminated and a homogeneous new wound created. The urethra itself was cut. The bladder was then prepared and the peritoneum reflected from it. A square pedicled flap was cut out of the bladder, which could be folded down to the penis (*Fig. 1B*). The penis was then turned up and the graft sewed completely on to the

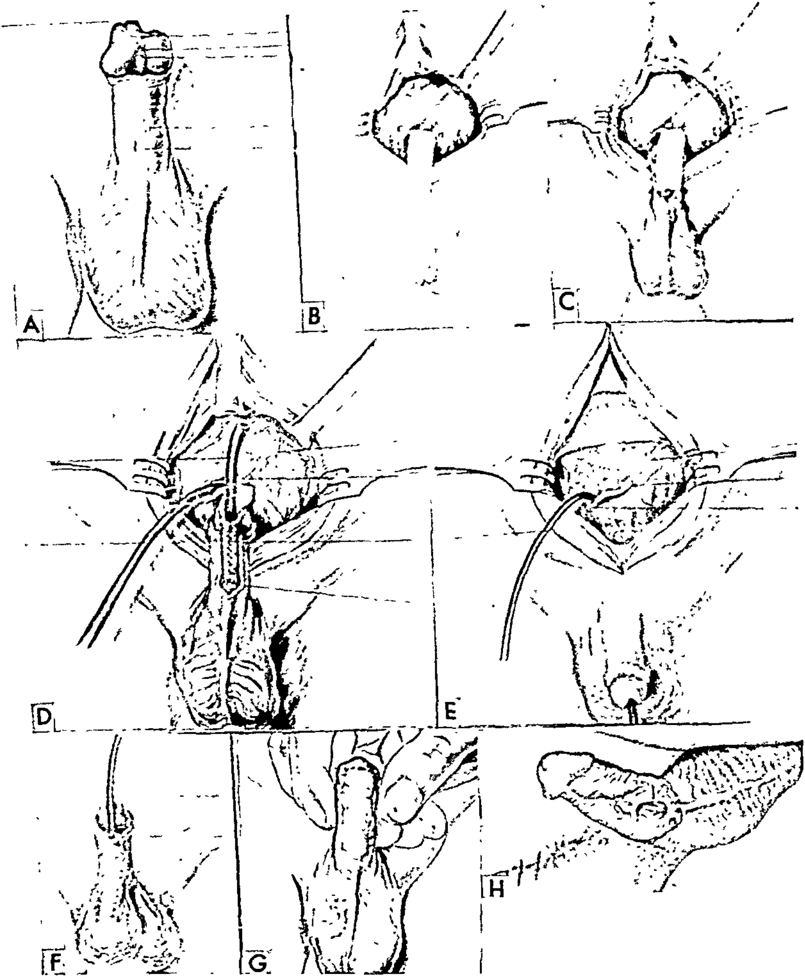

Fig. 1.—*A to H* inclusive, Case 1. *Appearance of hypospadias and fistulas in boy aged 7. B,* bladder prepared; pedicled flap folded down to penis. *C,* penis turned upward; graft sewn onto defect. *D,* graft formed into tube around rubber drain and duly sewn. *E,* graft cut off, leaving only catheter in bladder; penis turned downward. *F,* penis turned upward for demonstration. New urethra covered by graft taken from scrotum. *G,* hypospadias cured. *H* (Case 2) walnut-sized hypospadias in an adult; scar from high section; many scars around the hypospadias.

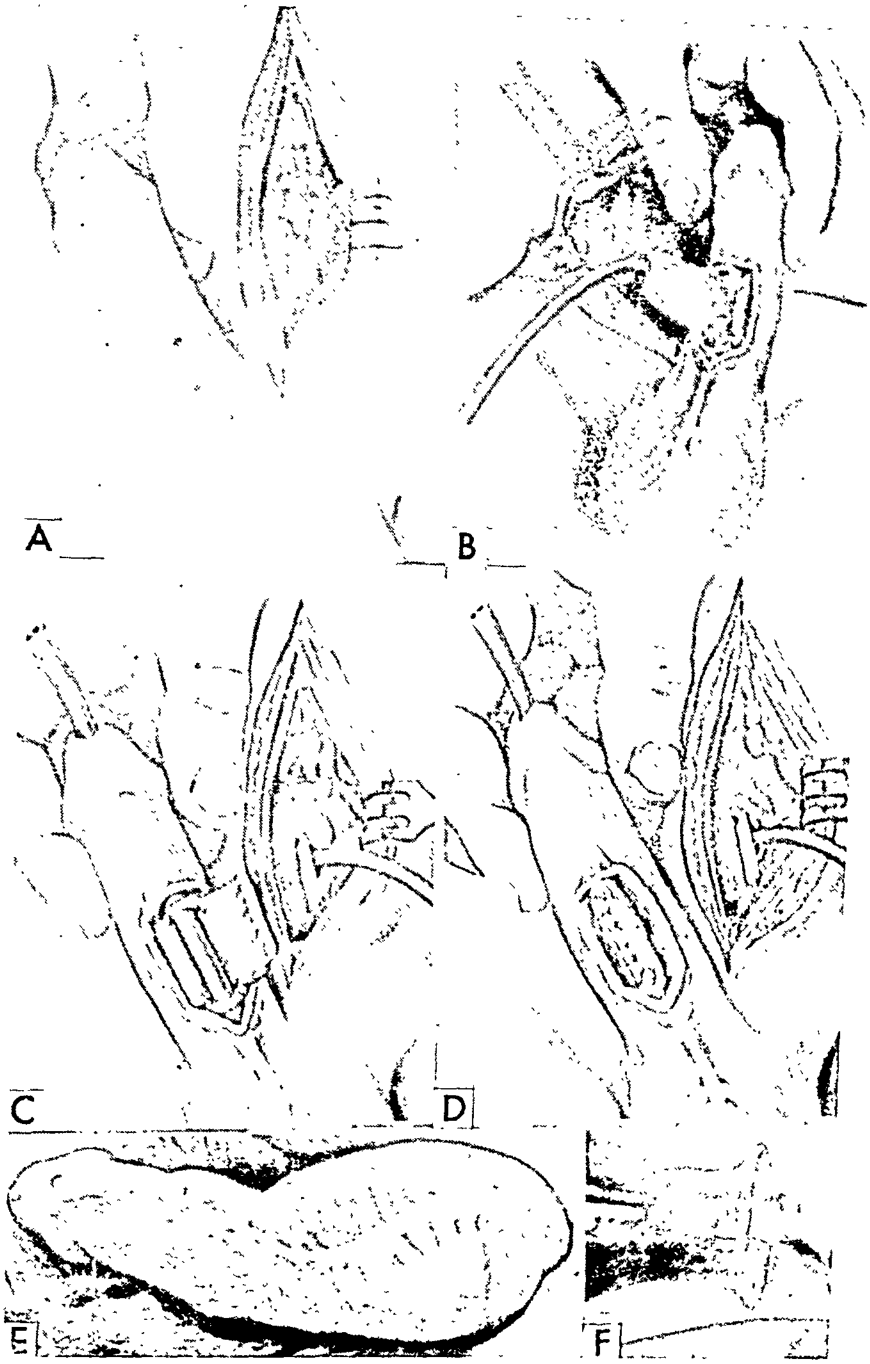

Fig. 2 (Case 2).—*A*, excision of all scarred tissue and urethra. Bladder is opened. *B*, pedicled flap of bladder formed and brought into contact with intersected urethra. Bladder is closed up to opening for catheter. *C*, pedicle of bladder is out; catheter remains in bladder. *D*, new urethra is formed. *E*, penis healed. *F*, demonstration of urethral function.

defect (Fig. 1*C*). (This must be done without tension.) The graft was next formed into a tube around a rubber drain and duly sutured (Fig. 1*D*). The pedicle of the graft remained in connection with the bladder. The bladder was closed except for the medial opening, into which a catheter was inserted. Ten days later the well-fed graft was cut off, leaving only the catheter in the bladder. Figure 1*E* shows the wound wide open, but in reality the wound was sewed up neatly and snugly around the catheter. When a single tube had been formed from the former urethra and the new vesical graft, a graft was taken from the scrotum to cover the new urethra and was sewed onto it. (Fig. 1*E*). When the bladder healed, it was necessary to put a catheter into the newly formed urethra. As a result of this, urethritis and pain occurred; it was obvious that the child could not tolerate a catheter, so a "boutonniere" was created and the catheter removed from the urethra. Through this passage undisturbed healing occurred and the final result was satisfactory (Fig. 1*G*). The boy has been under observation for a long time and urinates in a good stream without difficulty. Dilation of the urethra was performed without difficulty, and no stenosis or stricture has occurred in seven years.

It was my impression at first that this operation was suitable only for children, in view of the fact that changing states of fullness of the corpora cavernosa would disturb such a plastic procedure. Successful results, however, have been obtained in 2 adult patients. The case of 1 of these is here reported.

CASE 2.—A 34-year-old man was admitted to hospital with a history of gonorrhea ten years earlier, followed by prostatic abscess that ruptured into the rectum during an examination with the patient under anesthesia. Both urine and feces had been diverted from their natural passages. In addition to the fistula between the rectum and the bladder, there was hypospadias of the pars pendulla of the penis (Fig. 2*A*). Many operations had been done to close the hypospadias, but without success, so that when I first saw the patient the whole penile section was transformed into thick scar tissue, with the large hypospadic opening of the urethra (Fig. 2*B*).

Operative Technic.—The rectovesical fistula was first repaired by cutting circularly around the anus, the incision penetrating in all directions into the periprocytic tissue. The rectum was freed and the sphincter isolated. The rectum was brought out through the anus, so that the old scarred fistula in the rectum was placed exterior to the anus. The sphincter was sutured carefully around the rectum and the exteriorized portion cut off. (This was a modification of the Rochenegg operation.) A catheter was introduced into the bladder, and in about four weeks the rectum was completely healed. The hypospadias operation was then performed in the manner described (Fig. 2, *C* and *D*). The patient was followed for eight years and has had no trouble with urination or with rectal complaints since the last operation. When he was last examined erection and ejaculation were normal, the urine was clear, urination with a good stream was habitual (Fig. 2, *E* and *F*). Periodic dilation was done after the operation.

COMMENT

The mucous membrane of the bladder has been used as a transplant in the cure of hypospadias because of the good nutrition of the graft and its physiologic ability to conduct urine. It is not necessary, in this operation, to divert the urine through a perineal urethrostomy, but it is done through a cystostomy, which also has the advantage that the material for the graft is immediately at hand. There is no other organ so rich in mucous membrane, so elastic and so much inclined to heal easily as the bladder. Modern methods of operation take this quality into consideration. It is possible to extirpate much of the bladder and find, a few weeks later, that the walnut-sized remainder has become once more an organ of almost normal capacity. One should not hesitate, therefore, to cut large grafts from the anterior wall in order to obtain surplus material for a plastic operation. Although it is true the tubular graft material does not usually shrink—which is quite a contrast to what occurs with a free transplant—it is a good thing to suture without tension and to build the tube without a drain. The mucous membrane of the urethra and bladder will easily heal per primam, in view of the fact that they are cognate mucous membranes and do not have to perform any function that is new to them.

The nutrition of the graft is ample, so that there is no danger of necrosis. Severe purulent cystitis is a contraindication to this procedure, but mild cystitis or mild edema of the mucous membrane need not prevent its use.

SUMMARY

After commenting on the various usual operations for hypospadias, the author suggests a new physiologic method, based on the use of a transplant of mucous membrane from the bladder, which by nature is intended to transport urine. Two cases are reported: that of a 7-year-old boy with fistulous hypospadias and that of an adult who had undergone numerous earlier operations without success. The author is particularly convinced that this method will guarantee success, since it is physiologic. Many of the other methods thus far used have the disadvantage of using tissues for the transportation of urine that have to adapt themselves to this action. This has often proved impossible.

RÉSUMÉ

Après avoir commenté les diverses opérations usuelles pour hypospadias, l'auteur suggère une nouvelle méthode physiologique basée sur l'utilisation de la muqueuse de la vessie qui est faite pour le passage de l'urine, en tant que greffe. Il rapporte deux cas: celui d'un garçon de 7 ans présentant un hypospadias scrotal fistuleux, et celui d'un adulte ayant déjà subi sans résultat de nombreuses opérations. Dans les deux cas l'auteur est convaincu du succès de sa méthode, car elle est physiologique. Un grand nombre d'autres méthodes ont le désavantage d'utiliser des tissus qui doivent s'adapter au passage de l'urine, ce qui s'est souvent révélé impossible.

ZUSAMMENFASSUNG

Nach einer Besprechung der verschiedenen üblichen Operationen zur Behandlung der Hypospadie schlägt der Verfasser eine neues physiologisches Verfahren vor. Es beruht auf der Verwendung von Blasenschleimhaut als Transplantat, deren natürliche Funktion in der Fortleitung des Harnes liegt. Der Verfasser berichtet über zwei Fälle. Der eine betrifft einen siebenjährigen Knaben mit einer fistelförmigen Hypospadie des Hodensacks, der andere einen Erwachsenen, an dem zahlreiche Operationen ohne Erfolg ausgeführt worden waren. Der Verfasser ist überzeugt, dass sein Verfahren, da es physiologisch ist, in beiden Fällen zum Erfolg führen muss. Viele andere Methoden leiden unter dem Nachteil, dass sie Gewebsarten benützen, die sich der Aufgabe der Harnfortleitung erst anpassen müssen, was sich oft als unmöglich herausgestellt hat.

RIASSUNTO

Dopo aver dissertato sui varii metodo di operazioni usate nella ipospadia l'autore suggerisce un nuovo metodo fisiologico che si basa sull'uso di mucosa presa dalla vescica, in fùnzione di trapianto. Egli riporta due casi: quello di un bambino di 7 anni che aveva una ipospadia scrotale e quello di un adulto che si era sottoposto a numerosi interventi chirurgici senza trarne alcun vantaggio. In entrambi i casi l'autore si dichiara convinto che il suo metodo potrebbe avere successo data che è un metodo fisiologico. Gli altri metodi, infatti, hanno lo svantaggio di usare tessuti che devono essi stessi adattarsi al trasporto di urina, il chè si è spesso dimostrato impossibile.

RESUMEN

Después de comentar las varias operaciones usadas para hipospadias, el autor sugiere un nuevo método fisiológico, basado en el uso de mucosa de la vejiga como trasplante, el cual por naturaleza esta hecho para transportar orina. El se refiere a 2 casos: el de un niño de 7 años que tenía un hipospadias escrotal fistuloso y el de un adulto que se había sometido a numero-

sas operaciones sin éxito. En ambos casos el autor está particularmente convencido de que su método garantizaría el éxito, ya que es fisiológico. Muchos otros métodos tienen la desventaja de emplear tejidos que deben adaptarse al transporte de orina, lo cual se ha comprobado imposible frecuentemente.

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The longer I live the more it pains me to see man, who occupies his supreme place for the very purpose of obtaining a command over nature and freeing himself and his fellow-creatures from the violent force of necessity,—to see him, influenced by some preconceived and false notion, doing just the opposite of that which he wants to do; and then, because his whole design has been marred, bungling miserably over everything.

—Goethe

Intracranial Aneurysms, Congenital and Acquired: Diagnosis, Treatment and Prognosis

EDGAR N. WEAVER, M.D., F.A.C.S., F.I.C.S.

ROANOKE, VIRGINIA

WITHIN the past fifteen years the medical profession has placed increasing emphasis on intracranial aneurysms. A spontaneous subarachnoid hemorrhage is usually suspected on the basis of sudden headache, with or without loss of consciousness, and confirmed by bloody fluid revealed by lumbar puncture. In the majority of cases the bleeding is due to a ruptured intracranial aneurysm. Because of the difficulty in localization of the aneurysms before the development of thorough and safer angiographic methods, however, nothing much could be done from a surgical standpoint; the patients, therefore, were mainly treated conservatively with bed rest and sedation.

In 1927, Egas Moniz[1] in Spain introduced angiography. Fifteen to twenty years ago Jefferson[2] and Dandy[3] were pioneer workers in the field of intracranial aneurysms, but their diagnoses were made mainly from clinical signs, since angiographic examination was more of a procedure then than it is now and was infrequently used. At that time the carotid artery was exposed in the neck, thorotrast or diodrast was injected into the artery, and roentgen films were usually taken in the operating room with a portable machine. This was an unsatisfactory procedure, since the quality of the pictures was usually poor and not of much help in arriving at a diagnosis. In addition, there was a relatively high incidence of mortality and morbidity from the procedure itself. Within recent years, however, percutaneous arteriographic study of the carotid and vertebral system has become a relatively safe and a more satisfactory procedure. Until the past year the dye of choice was usually 35 per cent diodrast or 30 per cent urokon. At present, 50 per cent hypaque (sodium diacetrozoate) is being used, with fewer toxic effects and sharper contrast on the roentgenographic films. Dunn, Uihlein and Holman[4] have reported on the use of hypaque, 3 to 5 cc. in each injection, with excellent filling. The only complication encountered in the taking of 50 arteriograms took the form of extensive petechial hemorrhages over the face and orbital conjunctiva. This occurred in a patient known to be allergic. The only complication I have encountered thus far in about 30 injections is some blanching of the face on the side that received the injection. Thus, with improved technic and less toxic contrast media,

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many of the complications encountered in the past should be lessened. General anesthesia seems to have definite advantages over local anesthesia with regard to complications.

In 1952, Abbott, Gay, and Goodall[5] reported the complications in 174 cerebral arteriographic precedures. Most of these were of cerebral vascular origin, with temporary or permanent hemiplegia, aphasia, hemianopsias, convulsions and even death. Extracranial complications were cervical hematoma necessitating tracheotomy, severe irritation of the soft tissue, with fever and pain, hoarseness, transitory diffuse punctate hemorrhages of the face and neck and radiculitis of the cervical roots (from the taking of a vertebral arteriogram). Horner's syndrome, temporary and permanent, was occasionally encountered. The authors considered the complications due to mechanical factors, vasospastic factors, disturbance of the blood-brain barrier, air or blood clot embolism and sensitivity to drugs. Hypaque has not been used long enough to justify evaluation of the complications it may cause, and the extracranial complications should be essentially the same; the more serious cerebral complications, however, should be encountered less often.

With better angiographic technic aiding in the diagnosis of intracranial aneurysmal lesions, improved surgical methods have necessarily followed. Better surgical technic, careful selection of patients and the time of operation, and hypotensive anesthesia have all helped lower surgical mortality and morbidity rates. As time goes on, experience with the management of these lesions will certainly lead to many more cures.

Saccular intracranial aneurysms may be grouped, according to location, into those of the infraclinoid part of the internal carotid artery, those of the supraclinoid part of the internal carotid artery, those on or about the circle of Willis, those of the peripheral part of the major cerebral vessels and those in the posterior fossa. The arteriovenous malformations will be briefly discussed.

The symptoms and treatment of these saccular aneurysms vary with their various sites and will be discussed according to location.

Infraclinoid Aneurysms of the Internal Carotid Artery.—Infraclinoid aneurysms of the internal carotid artery occur on the cavernous part of the artery. These aneurysms are usually large, saccular lesions, causing symptoms because of compression of the adjacent structures or by rupture into the cavernous sinus, produc-

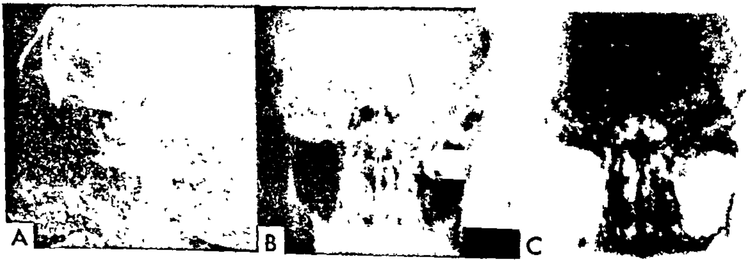

Fig. 1 *(Case 1)*.—*A*, arteriogram showing arteriovenous fistula between intracranial carotid artery and cavernous sinus. (Note large amount of dye in the region of cavernous sinus and dilated ophthalmic vein.) *B*, left carotid arteriogram showing dye in cavernous sinus (lateral view). *C*, normal right cerebral arteriogram of same patient for comparison.

ing an arteriovenous fistula between the carotid artery and the cavernous sinus. About 75 per cent of the arteriovenous lesions are produced by trauma and the remaining 25 per cent by spontaneous rupture.

Sugar,[6] on the basis of work done by Padgett,[7] suggested that aneurysms of this part of the carotid artery, as well as elsewhere in the cerebral vascular system, may be due to weakness of the vessel at the site of an embryonic vessel or possibly an actual nubbin of an incompletely resolved embryonic vessel. The carotid-cavernous sinus fistulas produce pulsating exophthalmos in about 90 per cent of the cases. There are frequently marked injection in the eye, chemosis, extraocular palsies and papilledema. The fifth nerve is involved, particularly the first division, producing pain in the forehead and occasionally facial paralysis. A bruit is usually present, which is an annoying symptom from the patient's point of view. The bruit is best heard by the examiner over a closed eye or in the temporal region. A ruptured infraclinoid aneurysm of the internal carotid artery into the cavernous sinus causes no subarachnoid bleeding unless there is a supraclinoid extension of the aneurysm.

The symptom complex of an unruptured aneurysm of the cavernous sinus is fairly typical, with, primarily, palsy of the third nerve and pain in the distribution of the fifth nerve, particularly the first division and, more rarely, in the second division. Occasionally the pain occurs in all divisions. The fourth and sixth cranial nerves are sometimes involved alone or in association with involvement of the oculomotor nerve. According to Jefferson,[2b] the most commonly encountered is the anterior cavernous syndrome in which the ophthalmic division is involved, with paralysis of the third nerve. In the middle cavernous sinus syndrome there is pain in the distribution of the first and second division of the trigeminal nerve, plus some type of extraocular paralysis. Pain in all three divisions of the trigeminal nerve, plus extraocular palsy, occurs with aneurysms involving the posterior part of the cavernous sinus.

Surgical treatment of an aneurysm of the internal carotid artery of the infraclinoid artery consists of ligation of the artery involved in the neck alone or the combination of this procedure with intracranial application of a clip to the internal carotid artery to trap the aneurysm.

There has been a great deal of variation in the mortality and morbidity rates attributed to cervical carotid ligations. In 1942 Dandy[8] reported 88 cases of cervical ligation, with a mortality rate of only 4.5 per cent and complications in 5.6 per cent. He stressed percutaneous occlusion of the carotid artery in the neck for ten minutes or longer prior to ligation. In 1951 Voris[9] reported a mortality rate of 17 per cent in his series. In 101 carotid ligations, Poppen[10] reported a 3 per cent mortality rate and an 8 per cent incidence of temporary or permanent hemiplegia. Steelman, Hayes, and Rizzoli[11] performed 14 ligations in the neck with no deaths. Bassett, List and Lemmen[12] reported a 3.4 per cent mortality rate for carotid ligations, and 12 of 29 patients (41 per cent) were hemiplegic.

In 1953, Black and German[13] reported a follow-up of 35 patients treated by cervical ligations, the common carotid usually being ligated in patients over 40 years of age. There were no operative deaths. These patients were followed over a sixteen-year period, at the end of which time 27 were living. In the opinion of these authors the strain on an aneurysm is the result of some of the stresses involved, including total hydrostatic pressure, the pulsatile nature of the flow, turbulence and jet action. After ligation they observed a reduction in hy-

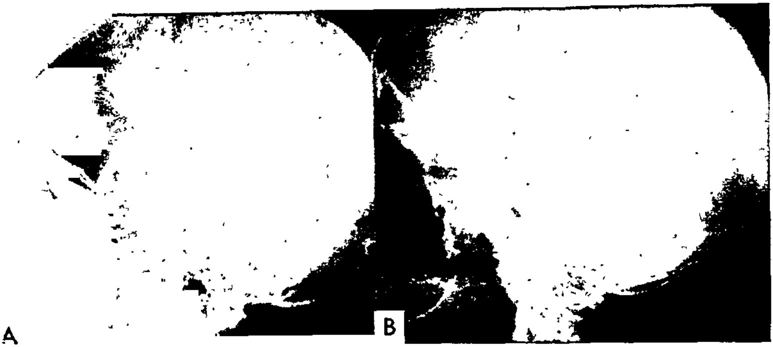

Fig. 2 *(Case 3)*.—*A,* roentgenogram of skull showing erosion of sellar region and abnormal calcification caused by large aneurysm. *B,* large aneurysm of left internal carotid artery.

drostatic pressure and pulsatile action. They concluded that systolic thrust is greatly diminished by ligation and that this accounted for the satisfactory results.

Hamby,[14] in a recent report, stated that he has limited his cervical ligations to infraclinoid aneurysms.

The following 3 cases are representative of aneurysms on the internal carotid artery in the cavernous sinus. In Case 1 a traumatic arteriovenous fistula was treated and cured by ligation of the internal carotid artery. In Case 2 an unruptured aneurysm of the cavernous sinus was present, producing palsy of the third nerve, with pain in the forehead. This aneurysm was treated by ligation of the common carotid artery, with temporary relief of pain for a week. A clip was then applied intracranially on the internal carotid artery with complete relief of pain and palsy of the third nerve. In Case 3 there was an aneurysm of the cavernous sinus that produced pain in the area of the second division of the trigeminal nerve, in addition to longstanding palsy of the sixth nerve. The

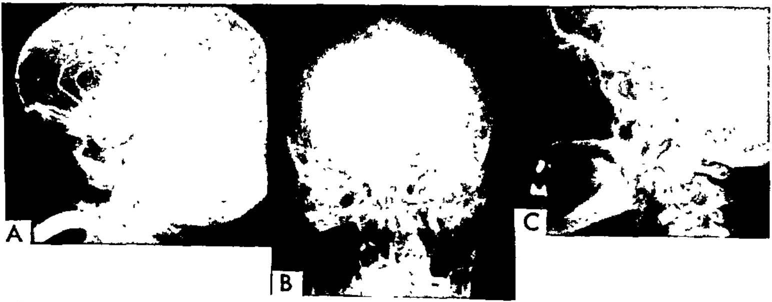

Fig. 3 *(Case 4)*.—*A,* large aneurysm, supraclinoid part of internal carotid artery (lateral view). *B,* anteroposterior view. *C,* postoperative film showing clip on internal carotid in neck and clips on internal carotid intracranially.

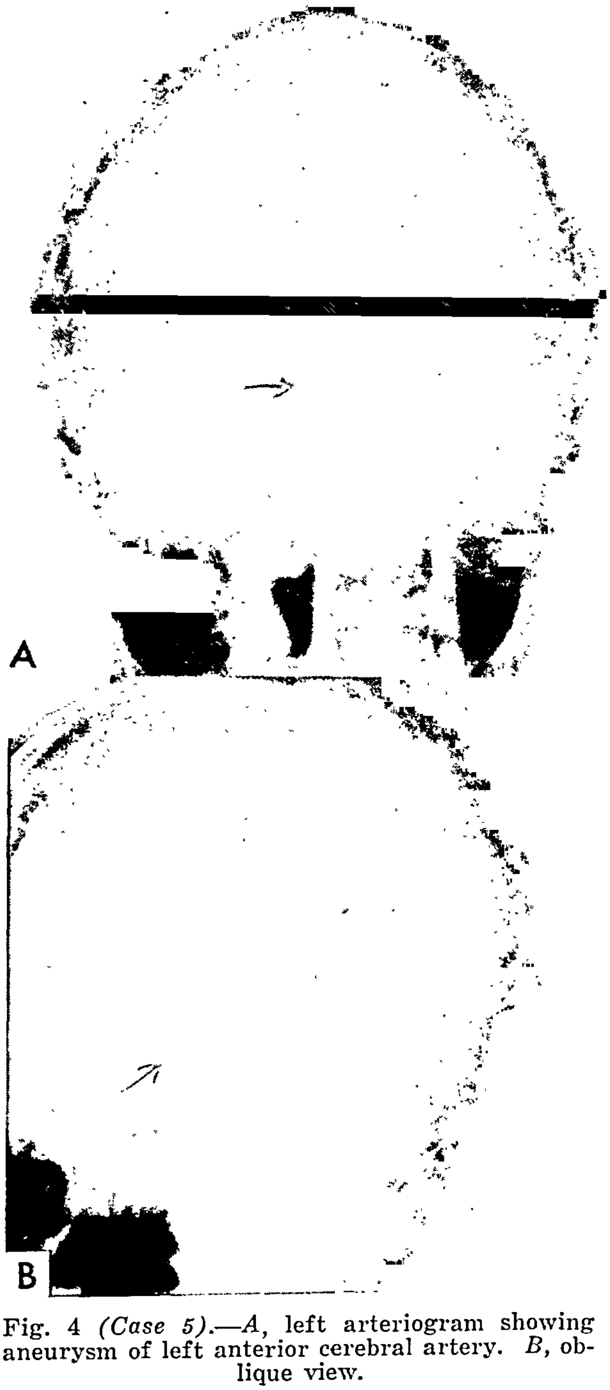

Fig. 4 *(Case 5)*.—*A*, left arteriogram showing aneurysm of left anterior cerebral artery. *B*, oblique view.

patient was relieved of her pain by ligation of the common carotid artery, but palsy of the abducens nerve persisted.

Case 1.—A 45-year-old white man fell and struck his head on a metal bar. He was dazed but not rendered unconscious. Two weeks later he began to notice a "hissing noise in his head," and when examined he had slight exophthalmos, with definite pulsation and injection of the conjunctiva on the left. Roentgenograms of the skull showed no abnormalities, and an arteriogram (Fig. 1, *A*, *B*, and *C*) revealed evidence of an arteriovenous fistula, with most of the dye going from the internal carotid into the cavernous sinus. Ligation of the left internal carotid was followed by absence of all symptoms and signs of the fistula in one week.

Case 2.—A 51-year-old white man had noticed episodes of transit diplopia for two years and constant left frontal headache for two and one half months. On examination there was evidence of incomplete palsy of the third nerve on the left and hypesthesia to pinprick on the left side of the forehead. Otherwise the results of neurological examination were negative. Roentgenograms of the skull were normal. Percutaneous arteriographic examination was done on the left, and a large aneurysm in the cavernous part of the left internal carotid artery was observed. The left common carotid artery was ligated, with some improvement in the forehead pain for about a week. The pain returned, however, and a left frontal craniotomy was done, with application of a clip to the intracranial internal carotid artery, distal to the aneurysm. Pain was relieved, and the oculomotor palsy cleared. When the patient was last heard from, three years after the operation, he had no symptoms and was working daily.

Case 3.—A 65-year-old white woman had diplopia, which developed in childhood and had persisted. Five years before her admission to the hospital she had a "cerebral hemorrhage" without residual paralysis. Ten days before her admission, severe pain developed in the left side of the face, with drooping of the left eyelid. Examination also revealed a complete left abducens paralysis.

The patient stated that she had been unable to move the left eye outward for eighteen years. There was pain in the distribution of the first and second division of the fifth nerve on the left, without objective sensory changes. Roentgenograms of the skull (Fig. 2*A*) revealed marked erosion of the sella turcica, with abnormal calcification. Arteriographic study (Fig. 2*B*) revealed a large aneurysm of the left internal carotid artery. The common carotid artery was exposed and ligated three

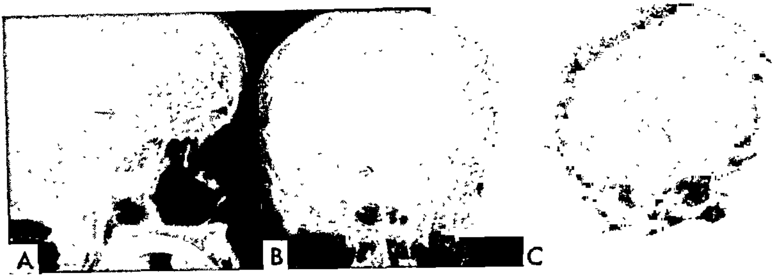

Fig. 5 *(Case 6)*.—*A*, right arteriogram showing aneurysm of anterior communicating artery. *B*, anteroposterior view. *C*, oblique view.

days after the arteriographic investigation, with complete relief of pain. There was no further drooping of the eyelid, but the inability to abduct the left eye persisted. This patient was seen one year after the operation. She had remained free of pain, but the abducens paralysis was still evident.

Supraclinoid Aneurysms of the Internal Carotid Artery.—Walker,[15] in reviewing 285 cases of intracranial aneurysms, observed that 71 verified aneurysms of the internal carotid artery had occurred above the clinoid process. He noted that headache or pain in the head was the most common complaint and was present for periods varying up to many years before the development of a subarachnoid hemorrhage, which occurred in 46 of the 71 patients. Half of the patients who had subarachnoid hemorrhages had no warning. In Walker's group of patients, failing vision and hemiplegia were the next most common symptoms. Diplopia is fairly frequent and is most often due to involvement of the oculomotor nerve but may be due to involvement of the trochlear or abducens nerve. Occasionally, papilledema is present.

Surgical treatment of supraclinoid aneurysms of the carotid artery consists mainly of cervical ligation of the internal carotid artery, which is probably inadequate alone; or this combined with ligation of the internal carotid artery intracranially; and clipping of the neck of the aneurysm.

Case 4 illustrates a large ruptured aneurysm of the supraclinoid internal carotid artery that was treated by the trapping method. The internal carotid was ligated in the neck, and a clip was applied to the internal carotid intracranially, distal to the aneurysm.

Case 4.—A 63-year-old white woman had sudden, severe headache, followed in a few minutes by loss of consciousness for several minutes. Upon regaining consciousness, she complained of weakness of the right leg. Examination revealed mental confusion, weakness of the right leg and suppression of the reflexes of the right leg. A lumbar puncture done on admission revealed a pressure of 380 mm. of water, with grossly bloody spinal fluid. Routine roentgenograms of the skull were normal. Bilateral arteriographic study (Fig. 3, *A* and *B*) revealed a large aneurysm of the left internal carotid. After the arteriographic procedure this patient had mild expressive aphasia. It was decided that she could not tolerate immediate ligation of the internal carotid artery in the neck, and accordingly, several days later, the left internal carotid artery was exposed and gradually occluded with a clamp designed by Dr. Gayle Crutchfield. After three days the artery was completely occluded, without ill effects. Three days later a left frontal craniotomy was done, and two silver clips were applied intracranially to the left internal carotid, distal to the aneurysm (Fig. 3 *C*). The neck of the aneurysm was too large to permit the application of clips. The patient had slight right hemiparesis and expressive aphasia for three weeks after the operation. When last seen, three months after the operation, she exhibited no significant neurologic abnormalities.

Aneurysms On or About the Circle of Willis.—The circle of Willis is formed in the front by the anterior cerebral arteries which are connected by the anterior communicating arteries. Behind are the two posterior cerebral arteries, which are branches of the basilar artery and are connected, normally, on each side with the internal carotid by a posterior communication. Aneurysmal lesions occur frequently on the proximal part of the middle cerebral at the circle of Willis and on the anterior cerebral and anterior communicating vessels. Aneurysms on the posterior communicating artery are extremely rare. Of 143 cases reported by Poppen[10] only two were on the posterior communicating, and they were present in 37 cases or 3.5 per cent of 1,023 cases reviewed by McDonald and Korb.[16] Aneurysms of the posterior cerebral arteries are also rare and were found in about 3 per cent of cases of intracranial aneurysmal lesions by McDonald and Korb.[16]

In Walker's review of 285 aneurysmal tumors,[15] he found 28 verified aneurysms of the proximal part of the middle cerebral artery, or approximately 10 per cent. An aneurysm of the proximal part of the middle cerebral artery cannot be diagnosed prior to rupture, which produces a subarachnoid hemorrhage. Hemiparesis or hemiplegia is usually present, with no involvement of the cranial nerve.

Aneurysms of the anterior cerebral and the anterior communicating arteries are usually not diagnosed until rupture occurs, but symptoms of headache may be present for months or years prior to rupture. After rupture, approximately 65 per cent of the patients lose consciousness, and those who regain consciousness may complain of some type of visual impairment without oculomotor palsies. There are usually no other localizing or lateralizing signs, and the lesions are usually located only by arteriographic studies. Ruptured aneurysms of the circle of Willis carry a mortality rate of about 35 to 50 per cent, about half of the patients dying in the first forty-eight hours. Recurrent bleeding has been reported by Hyland[17] as occurring in 20 per cent of the patients and by Hamby[18] in 50 per cent. Norlén and Olivecrona[19] estimated that the mortality rate for patients with the second attack is about seventy to 80 per cent.

The surgical treatment of aneurysms of the circle of Willis, whether they are on the middle cerebral, the anterior cerebral, the anterior communicating or the posterior communicating artery, is essentially the same; that is, it consists of cervical ligation or direct attack on the aneurysm. In the direct attack the neck of the aneurysm is occluded, if possible, by the use of clips or ligature, both proximal and distal to the aneurysm on the parent vessel; or by wrapping the aneurysm with hammered muscle or gelfoam for reinforcement.

Norlén[20] observed that 10 to 15 per cent of the patients who had undergone cervical ligation died of recurrent hemorrhages. Cervical ligation possibly offers some benefit to patients with aneurysms of the circle of Willis, but it is certainly not curative. With improved surgical technic and hypotensive and hypothermic anesthesia, the direct approach is becoming more and more the accepted procedure. Norlén and Olivecrona[19] pointed out that the mortality rate of intracranial operations is extremely high during the first two weeks after hemorrhage, because of impairment of the cerebral circulation, the presence of blood in the subarachnoid space or of clots in the brain substance, producing increased intracranial pressure. Cerebral vasospasm is present from the beginning and usually lasts from two to three weeks. Hamby[14] has also pointed out that the mortality rate is decidedly lowered among patients who are operated upon after at least three weeks have elapsed since the initial hemorrhage.

To add support to the direct attack on aneurysms of the circle of Willis, Norlén and Barnum[21] reported 15 cases in which the neck of the aneurysm of the anterior communicating artery was clipped or ligated with one operative death. In the 14 survivors, there was no recurrent bleeding.

Although in my own opinion the only cure for aneurysms of the anterior part of the circle of Willis is the direct attack and although I have successfully applied a clip to the neck of an aneurysm in several cases, the following 2 cases illustrate some of the difficulties encountered when the direct approach is used. In the first instance the aneurysm ruptured during the dissection, with profuse bleeding, and in the second it was impossible to apply a clip to the aneurysm and was necessary to reinforce it with hammered muscle.

CASE 5.—A 14-year-old white boy had an onset of sudden severe headache, followed by unconsciousness for one hour. Upon awakening he had severe headache and stiffness of the neck, but no paralysis. Examination on admission to the hospital one day later revealed mental sluggishness, but there were no positive neurologic abnormalities. A lumbar puncture was done, revealing a pressure of 180 mm. of water with grossly bloody spinal fluid. Routine roentgenograms of the skull were normal. Bilateral percutaneous arteriographic study (Fig. 4, *A* and *B*) with 35 per cent diodrast revealed a small aneurysm on the left anterior cerebral artery just proximal to the anterior communicating artery. A left frontal craniotomy was done and the aneurysm exposed. It had an extremely thin wall, and the blood could be seen eddying within it. During the dissection and mobilization of this aneurysm so that a clip could be applied to the neck, there was a rupture with profuse bleeding. A clip was finally applied to the neck of the aneurysm and also to the anterior cerebral artery. The patient did not regain consciousness and died the next day.

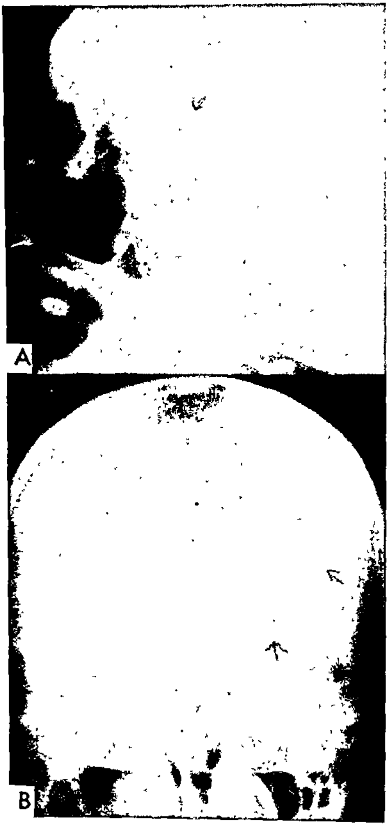

Fig. 6 *(Case 7)*.—*A*, aneurysm of peripheral part of left middle cerebral artery. *B*, aneurysm of peripheral part of middle cerebral artery and elevation of sylvian vessels due to clot in temporal lobe.

CASE 6.—A 51-year-old white woman was admitted to the hospital because of a sudden, severe headache without loss of

On admission she was confused, drowsy, and had a stiff neck, but the neurologic examination otherwise gave essentially negative results. Routine roentgenograms of the skull were normal. Bilateral arteriographic study (Fig. 5, *A*, *B* and *C*) revealed an aneurysm at the juncture of the right anterior communicating and the anterior cerebral artery. A right frontal craniotomy was done three weeks after admission and one week after the arteriographic procedure. The aneurysm was well exposed. The wall was extremely thin, but it was possible to apply a clip to the neck of the aneurysm. Accordingly, small strips of hammered muscle were wrapped around the aneurysm to reinforce it. The postoperative course was uneventful, and six months after the operation the patient was asymptomatic.

Aneurysm of the Peripheral Part of the Major Cerebral Vessels.—Aneurysms of the posterior cerebral artery constitute only about 3 per cent of intracranial aneurysms and can be diagnosed, as a rule, only by vertebral arteriographic study. Aneurysms of the peripheral part of the middle cerebral artery are relatively frequent and usually present themselves with sudden rupture, subarachnoid bleeding and an intracerebral hematoma in the area of the temporal lobe. The diagnosis of such an aneurysm can be made by the history and bloody spinal fluid and confirmed arteriographically. Treatment consists of evacuation of the hematoma and occlusion of the neck of the aneurysm. If the aneurysm is peripheral to the bifurcation of the middle cerebral artery and does not involve the main trunk of the middle cerebral artery, the results are much more satisfactory.

The following case is an example of an aneurysm occurring on the peripheral part of the left cerebral artery with sudden rupture, producing a hematoma in the left temporal lobe. Evacuation of the hematoma and removal of the aneurysm yielded a successful result.

CASE 7.—A 55-year-old white man had a sudden onset of severe headache while playing cards, with loss of consciousness. He regained consciousness the next day but was confused. He had severe headache and a stiff neck. Two days later there was a sudden increase in the severity of the headache, and he became semicomatose, with paralysis of the right side of the face and the right arm and leg. Examination revealed facial weakness on the right and flaccid paralysis of the right arm and leg. Routine roentgenograms of the skull were normal. A left percutaneous arteriographic study (Fig. 6, *A* and *B*) with 35 per cent diodrast was done, revealing an aneurysm on the peripheral part of the middle cerebral artery with elevation of the sylvians vessels, suggesting a mass in the left temporal lobe. A left temporal craniectomy was done, and a large intracerebral clot was removed from the temporofrontal region. A small aneurysm was observed on the branch of the middle cerebral artery; this was clipped and removed. After the operation, there was paralysis of the right arm and leg, as well as total aphasia. Six months after the operation, examination revealed returning function of both extremities, and the patient was able to speak fairly well. One year after the operation he was walking alone, talking well and using the right arm and hand for gross movements, but there was considerable spasticity of both extremities. He had several convulsive seizures of grand mal during the first year, controlled by anticonvulsant medication.

Peripheral aneurysms of the anterior cerebral artery are usually never discovered until bleeding occurs and arteriographic examination is done. Such an aneurysm is frequently associated with a hematoma in the frontal lobe. Surgical treatment consists of evacuation of the hematoma and the occlusion of the neck of the aneurysm.

In Case 8 the patient had a bleeding aneurysm of the left anterior cerebral artery, which produced a hematoma of the left frontal lobe extending into the ventricle. The hematoma was evacuated and the aneurysm removed with good results.

CASE 8.—A 39-year-old white man had a sudden onset of headache, with stupor and bloody spinal fluid. He was in the hospital for approximately two weeks under conservative treatment, with marked improvement. Suddenly, during the third week of hospitalization, severe headache and coma recurred. A repeated spinal puncture revealed a pressure of 350 mm. of water, with bloody spinal fluid. Bilateral carotid arteriograms (Fig. 7) were taken, and an aneurysm was observed on the left anterior cerebral artery, which filled from the left injection. There was depression of the left anterior cerebral artery, suggesting a mass lesion. A left frontal craniotomy was done, and a large hematoma was observed in the frontal lobe, extending into the anterior horn of the left ventricle. The hematoma was removed by suction; a clip was applied to the neck of the aneurysm, and the aneurysm was removed. The postoperative course was stormy for several days, and the patient had pronounced weakness of both legs for approximately two weeks. When seen two months after discharge from the hospital, he was normal mentally and had no neurologic deficits.

Aneurysms of the posterior fossa are rare, and I have never encountered one except on postmortem examination. The basilar artery is frequently involved, producing multiple involvement of the cranial nerves. Diagnosis can be established by vertebral arteriographic study. Rizzoli and Hayes[22] reported the successful removal of a berry aneurysm of the left posterior inferior cerebral artery in the case of a man who had a subarachnoid hemorrhage. The aneurysm was discovered on operation after a ventriculogram had revealed hydrocephalus with a shift of the fourth ventricle to the right.

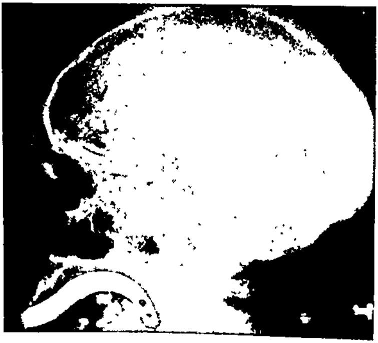

Fig. 7 *(Case 8)*.—Aneurysm of peripheral part of left anterior cerebral artery and depression of anterior cerebral artery due to hematoma of frontal lobe.

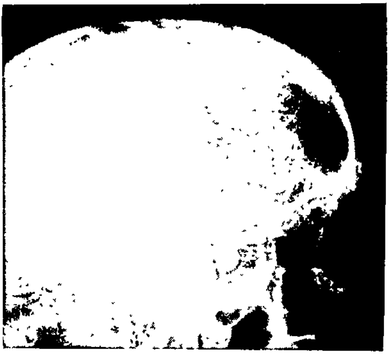

Fig. 8 *(Case 9)*.—Arteriovenous aneurysm and small berry aneurysm in right frontal region. Note depression of anterior cerebral artery by an intracerebral hematoma.

Arteriorvenous Malformations.—Arteriovenous malformations, although they may occur in other areas, usually occur in the region of supply of the middle cerebral artery, though rarely in the posterior fossa. These lesions are most often on the cortex, with subcortical extension. They usually produce jacksonian or generalized seizures. The aneurysm ruptures and produces a subarachnoid hemorrhage in about 20 per cent of the cases. A patient with previous epilepsy in whom sudden subarachnoid bleeding occurs should be suspected of having an arteriovenous malformation. The bleeding may be entirely subarachnoid, or it may be associated with an intracerebral clot. Treatment consists of symptomatic therapy with anticonvulsive medication or operative intervention. Operative measures vary from cervical ligation to direct attack on the aneurysm. The smaller lesion may be excise [illegible] excision of

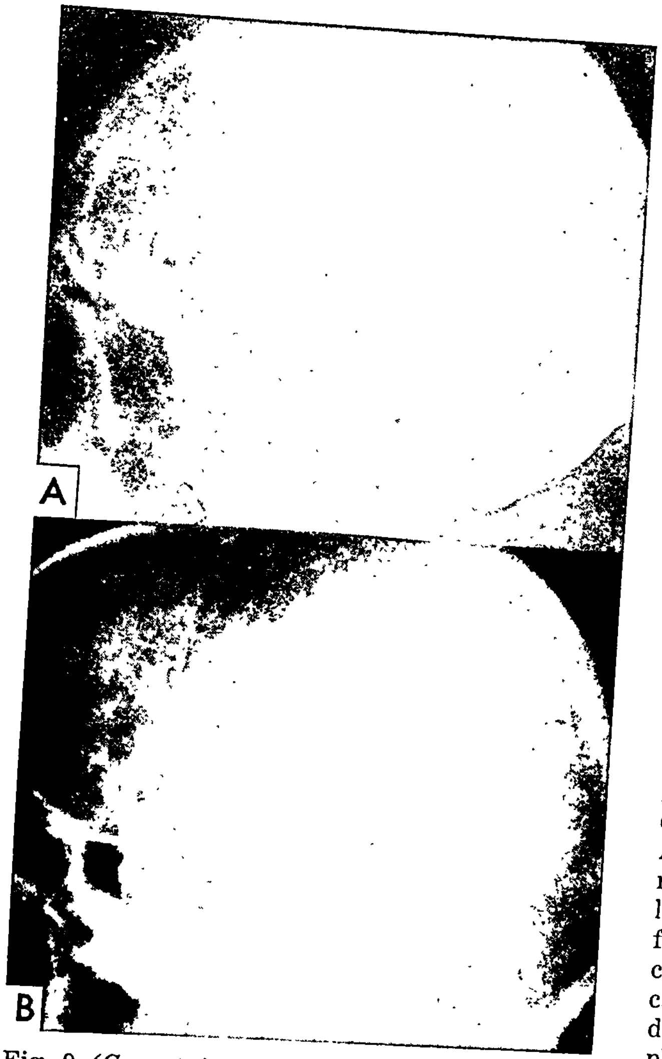

Fig. 9 *(Case 10)*.—*A*, large area of calcification in left parietal region. *B*, large arteriovenous aneurysm in left parietal region at site of calcification.

CASE 9.—A 14-year-old white girl had a sudden headache with loss of consciousness. On examination she was lethargic and had a stiff neck, with a positive Kernig sign. There was a positive Babinski sign on the left, with marked weakness of the left arm and leg. Ten days after onset a percutaneous arteriogram (Fig. 8) revealed an aneurysm high in the left frontal lobe, at the level of the coronal suture. A right frontal craniotomy was done, the clot evacuated and the arteriovenous malformation removed in toto. A small berry aneurysm was found, clipped and removed (Dr. W. P. Tice).

CASE 10.—A 53-year-old white man had severe headache and drowsiness several hours before admission to the hospital. He stated that he had had generalized convulsive seizures for the past several years. Examination revealed weakness of the right arm and leg, with a positive Babinski sign on the right. The tendon reflexes were slightly less active in the right arm and leg than in the left. A lumbar puncture revealed bloody spinal fluid with a pressure of 350 mm. of water. Routine roentgenograms of the skull (Fig. 9 *A*) revealed extensive calcification of the left parietal area. A left percutaneous arteriogram (Fig. 9 *B*) revealed an extensive angiomatous lesion of the left parietal region. The patient recovered from the subarachnoid hemorrhage, but because of the extensiveness of the lesion, surgical intervention was not attempted. He was discharged from the hospital on dilantin and phenobarbital. He continued to have an occasional convulsion but had no other complaints and enjoyed full use of his extremities.

the larger extensive lesions, however, in spite of modern technic and anesthesia, produces a high incidence of mortality and morbidity.

In the following 2 cases arteriovenous aneurysms were present.

In Case 9 a small arteriovenous lesion was associated with a small berry aneurysm over the frontal lobe which bled, producing a subarachnoid hemorrhage and an intracerebral clot. In Case 10 there was an extensive arteriovenous lesion on the left side, which was treated conservatively.

SUMMARY

Aneurysms of the internal carotid artery below the clinoid, both unruptured and ruptured, can be adequately treated by cervical ligation alone or combined with intracranial clipping, thereby trapping the aneurysm. Supraclinoid aneurysms are best treated by the trapping method in most instances.

Aneurysms of the circle of Willis, with rupture, are associated with a mortality of 50 per cent or more. The incidence of recurrence may be as high as 50 per cent and approximately 70 to 80 per cent of patients die with the second attack. The mortality rate from surgical intervention, by direct attack on the aneurysm, is no more than 20 per cent, which is definitely lower than the mortality rate among patients who are left untreated.

Aneurysms of the peripheral portions of the major cerebral vessels are usually not diagnosed before rupture, at which time they produce a subarachnoid hemorrhage and frequently an intracerebral clot. The treatment of choice is the direct attack on the aneurysm, evacuation of the clot, and clipping of the neck of the aneurysm. Cervical ligation is probably of no significant benefit in the treatment of peripheral aneurysms.

Arteriovenous malformations are in many cases handled conservatively, particularly when the only symptoms are convulsive seizures. Smaller lesions can be satisfactorily removed by surgical means, but in many instances the larger lesions are impossible to remove without causing significant increases in mortality and morbidity.

ZUSAMMENFASSUNG

Sowohl geplatzte wie nicht geplatzte Aneurysmen der A. carotis int. unterhalb des Proc. clinoideus können erfolgreich durch blosse Ligatur am Halse oder in Verbindung mit Abkelmmung innerhalb des Schädels, wodurch das Aneurysma verödet wird, behandelt werden. Oberhalb des Proc. clinoideus liegende Aneurysmen werden in den meisten Fällen ambesten mit der Verödungsmethode behandelt.

Die Aneurysmen des Willisschen Zirkels haben, wenn sie einen Riss aufweisen, eine Sterblichkeit von 50 Prozent und mehr. Das Auftreten von Rückfällen kann eine Höhe von 50 Prozent erreichen, und ungefähr 70 bis 80 Prozent der Patienten sterben am zweiten Anfall. Die Sterblichkeitsquote als Folge eines direkten chirurgischen Angriffs auf das Aneurysma ist nicht höher als 20 Prozent und bestimmt niedriger als bei Kranken, die unbehandelt geblieben sind.

Aneurysmen der peripheren Abschnitte der grösseren Hirngefässe werden im allgemeinen nicht vor dem Platzen entdeckt; dann verursachen sie eine subarachnoidale Blutung und häufig ein Blutgerinnsel innerhalb des Gehirns. Die Behandlung der Wahl besteht in direktem Angriff auf das Aneurysma, Ausräumung des Gerinnsels und Abklemmung des Halses des Aneurysmas. Die Halsligatur bietet offenbar keine bedeutenden Vorteile.

Arteriovenöse Missbildungen werden in vielen Fällen, besonders wenn die einzigen Symptome in Krampfanfällen bestehen, konservativ behandelt.

Kleinere Veränderungen können auf chirurgischem Wege erfolgreich beseitigt werden, während die grösseren sich nicht ohne wesentliche Erhöhung der Sterblichkeit und der Morbidität resezieren lassen.

RIASSUNTO

L'aneurisma della carotide interna, sottoclinoideo rotto o non rotto, può essere trattato efficacemente con la legatura dell' arteria cervicale. Gli aneurismi sopraclinoidei, invece, sono da trattare preferibilmente con il metodo classico.

Gli aneurismi del poligono di Willis quando si rompono danno il 50% di mortalità. La frequenza delle recidive va fino al 50% e il 70-80% dei malati muoiono dopo il secondo attacco. La mortalità operatoria, nei casi di aggressione diretta dell'aneurisma, non è maggiore del 20%, il che è di gran lunga meglio di quanto avviene nei pazienti non operati.

L'aneurisma dei tratti più periferici delle arterie cerabrali più importanti di solito no viene diagnosticato prima della rottura, in coincidenza della quale deter-

mina una emorragia subaracnoidea o spesso un ematoma intracerebrale. La cura di scelta è l'attacco diretto dell'aneurisma. La legatura cervicale non porta alcun beneficio.

Le malformazioni arterovenose sono spesso trattate conservativamente specie quando i sintomi sono soltanto di tipo convulsivo.

Le lesioni più piccole possono essere asportate chirurgicamente con successo, ma in molti casi quelle più gravi non possono essere asportate senza causare un ecessivo aumento della mortalità e della morbilità.

RÉSUMÉ

Les anévrismes de la carotide interne au-dessous de la clinoïde—rupturés ou non—peuvent être traités—efficacement par la ligature cervicale seule, ou combinée avec le pincement intracranien, bloquant ainsi l'anévrisme. Cette méthode de "bloquage" est la plus efficace dans la plupart des cas d'anévrismes supraclinoidiens.

Les anévrismes rupturés du polygone de Willis présentent un taux de mortalité de 50% et plus. Le taux de récidive peut atteindre 50%, et la deuxième atteinte est mortelle dans environ 70 à 80% des cas, alors que la mortalité après intervention chirurgicale n'est que de 20%, dont beaucoup plus basse que sans traitement.

Les anévrismes des artères distales des gros vaisseaux intracraniens ne sont en général pas diagnostiqués avant la rupture; ils provoquent à ce moment une hémorragie sous-arachnoïdienne et, fréquement, un caillot intracérébral. Le traitement de choix est l'attaque directe de l'anévrisme, l'évacuation du caillot, et le pincement du collet de l'anévrisme. La ligature cérébrale est probablement sans grand effet.

Les vices de conformation artérioveineuse sont traités de manière conservatrice dans bien des cas, surtout lorsque les seuls symptômes consistent en crises convulsives.

Les lésions de peu d'importance peuvent être extirpées chirurgicalement: quant aux autres il est souvent impossible de les exciser sans causer une augmentation importante du taux de mortalité et de morbidité.

RESUMEN

Los aneurismas de la arteria carótida interma debajo de la apófisis clinoides, tanto rotos como intactos, pueden tratarse adecuadamente por ligadura cervical sola ó combinada con pinzamiento, intracraneal, aislando así, el aneurisma Los aneurismas supraclinoideos se tratan mejor por ete método en la mayoría de los casos.

Los aneurismas del polígono de Willis, dan cuando se rompen, una mortalidad de 50 por ciento ó más. La incidencia de la recidiva puede ser hasta de 50 por ciento y aproximadamente 70 a 80 por ciento de los pacientes mueren en el segundo ataque. La mortalidad operatoria por intervención directa sobre el aneurisma no es mas del 20 por ciento, evidentemente menor que la mortalidad de los pacientes no tratados.

Los aneurismas de las porciones periféricas de los vasos cerebrales mayores generalmente no se diagnostican autes de su ruptura, y cuando esta sucede produce hemorragia subaracnoidea y frecuentemente un hematoma intracerebral. El tratamiento de elección es la intervención directa sobre el aneurisma, evacuación del coágulo y prinzamiento del cuello del aneurisma. La ligadura cervical probablemente no tiene importancia.

Las malformaciones arteriovenosas son tratadas en muchos casos por métodos conservadores, particularmente cuando los síntomas son solo crisis convulsivas.

Las lesiones pequenas pueden ser extirpadas satisfactoriamente, pero en muchos

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Os aneurismas do triangulo de Willis, quando há rutura, elevam a mortalidade a 50% ou mais. A incidência de recidiva pode atingir 50% e em, aproximadamente, 70-80% os doentes morrem no segundo ataque. A taxa de mortalidade por intervenção cirúrgica sobre os aneurismas não é maior que 20%, cifra que é indiscutivelmente mais baixa que a da mortalidade entre os pacientes não tratados.

Os aneurismas das porções periféricas dos grandes vasos cerebrais não são habitualmente diagnósticados antes da rutura, período em que provocam hemorragia subaracnóide e frequentes coágulos intracerebrais. O melhor tratamento é accesso cirúrgico direto ao aneurisma, com evacuação do coâgulo e e grampeamento no colo do aneurisma. A ligadura cervical parece não exercer beneficio significativo.

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mina una emorragia subaracnoidea o spesso un ematoma intracerebrale. La cura di scelta è l'attacco diretto dell'aneurisma. La legatura cervicale non porta alcun beneficio.

Le malformazioni arterovenose sono spesso trattate conservativamente specie quando i sintomi sono soltanto di tipo convulsivo.

Le lesioni più piccole possono essere asportate chirurgicamente con successo, ma in molti casi quelle più gravi non possono essere asportate senza causare un ecessivo aumento della mortalità e della morbilità.

RÉSUMÉ

Les anévrismes de la carotide interne au-dessous de la clinoïde—rupturés ou non—peuvent être traités—efficacement par la ligature cervicale seule, ou combinée avec le pincement intracranien, bloquant ainsi l'anévrisme. Cette méthode de "bloquage" est la plus efficace dans la plupart des cas d'anévrismes supraclinoidiens.

Les anévrismes rupturés du polygone de Willis présentent un taux de mortalité de 50% et plus. Le taux de récidive peut atteindre 50%, et la deuxième atteinte est mortelle dans environ 70 à 80% des cas, alors que la mortalité après intervention chirurgicale n'est que de 20%, dont beaucoup plus basse que sans traitement.

Les anévrismes des artères distales des gros vaisseaux intracraniens ne sont en général pas diagnostiqués avant la rupture; ils provoquent à ce moment une hémorragie sous-arachnoïdienne et, fréquement, un caillot intracérébral. Le traitement de choix est l'attaque directe de l'anévrisme, l'évacuation du caillot, et le pincement du collet de l'anévrisme. La ligature cérébrale est probablement sans grand effet.

Les vices de conformation artérioveineuse sont traités de manière conservatrice dans bien des cas, surtout lorsque les seuls symptômes consistent en crises convulsives.

Les lésions de peu d'importance peuvent être extirpées chirurgicalement: quant aux autres il est souvent impossible de les exciser sans causer une augmentation importante du taux de mortalité et de morbidité.

RESUMEN

Los aneurismas de la arteria carótida interma debajo de la apófisis clinoides, tanto rotos como intactos, pueden tratarse adecuadamente por ligadura cervical sola ó combinada con pinzamiento, intracraneal, aislando así, el aneurisma Los aneurismas supraclinoideos se tratan mejor por ete método en la mayoría de los casos.

Los aneurismas del polígono de Willis, dan cuando se rompen, una mortalidad de 50 por ciento ó más. La incidencia de la recidiva puede ser hasta de 50 por ciento y aproximadamente 70 a 80 por ciento de los pacientes mueren en el segundo ataque. La mortalidad operatoria por intervención directa sobre el aneurisma no es mas del 20 por ciento, evidentemente menor que la mortalidad de los pacientes no tratados.

Los aneurismas de las porciones periféricas de los vasos cerebrales mayores generalmente no se diagnostican autes de su ruptura, y cuando esta sucede produce hemorragia subaracnoidea y frecuentemente un hematoma intracerebral. El tratamiento de elección es la intervención directa sobre el aneurisma, evacuación del coágulo y prinzamiento del cuello del aneurisma. La ligadura cervical probablemente no tiene importancia.

Las malformaciones arteriovenosas son tratadas en muchos casos por métodos conservadores, particularmente cuando los síntomas son solo crisis convulsivas.

Las lesiones pequenas pueden ser extirpadas satisfactoriamente, pero en muchos

casos las lesiones mayores son imposibles de extirpar sin causar una alza en las mortalidad y morbilidad.

SUMARIO

Os aneurismas da carótida interna, abaixo da apôfise clinóide, rotos ou não, podem ser tratados corretamente pela ligadura cervical isolada ou em combinação com a hemostasia intra-craniana. Os aneurismas supra-clinoidianos são melhor tratados pelo grampeamento.

Os aneurismas do triangulo de Willis, quando há rutura, elevam a mortalidade a 50% ou mais. A incidência de recidiva pode atingir 50% e em, aproximadamente, 70-80% os doentes morrem no segundo ataque. A taxa de mortalidade por intervenção cirúrgica sobre os aneurismas não é maior que 20%, cifra que é indiscutivelmente mais baixa que a da mortalidade entre os pacientes não tratados.

Os aneurismas das porções periféricas dos grandes vasos cerebrais não são habitualmente diagnósticados antes da rutura, período em que provocam hemorragia subaracnóide e frequentes coágulos intracerebrais. O melhor tratamento é accesso cirúrgico direto ao aneurisma, com evacuação do coâgulo e e grampeamento no colo do aneurisma. A ligadura cervical parece não exercer beneficio significativo.

As malformações arterio-venosas são, em muitos casos, tratadas conservadoramente, sobretudo quando os sintomas são apenas crises convulsivas.

As lesões menores podem ser ressecadas com êxito cirúrgicamente, mas, em muitos casos as lesões maiores são impossiveis de remover sem causar maiores mortalidade e morbilidade.

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Postmeningitic Subdural Effusions

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A NEW development in pediatrics has been the observation that subdural effusions frequently follow meningitis. We should like to summarize our experience in the past several years with this phenomenon and indulge in a few speculations as to its pathogenesis.

Subdural effusions are exudate-free collections of fluid in the subdural space, containing protein in amounts varying from 15 to 2,000 mg. per hundred cubic centimeters, with cell counts of a few to several hundred, usually lymphocytes and crenated red cells. The volume of this fluid varies from 5 to 70 cc. on each side. Though it frequently appears on one side at first, it is usually on both sides. The presence of a subdural effusion is to be suspected in any anorexic, listless, irritable child recently treated for bacterial meningitis. Customarily there are no focal neurologic signs. The fontanel has been described as tense and bulging, but in our experience it is usually soft and pliant. The diagnosis is readily made by inserting a needle to a depth of 2 to 3 mm. in the subdural space at the extreme lateral angle of the fontanel and withdrawing the fluid. If a large quantity is removed, there is frequently a prompt and dramatic temporary improvement in the child's appearance and performance.

The commonest cause of subdural effusion is purulent meningitis. The incidence is not definitely known, but several large pediatric institutions have reported from 30 to 60 per cent. We estimate that the incidence is about 50 per cent in children whose fontanels are open. Consequently we have recommended tapping the subdural space in all cases of meningitis in infants under 18 months of age.

Although subdural effusion appears to be a new syndrome, actually it is quite old and was referred to even by Hippocrates. Antibiotics have altered the statistics of mortality due to meningitis, and an increasing incidence of subdural effusions may be expected. Physicians have been understandably relieved and gratified that children with meningitis have been saved, but it now appears that perhaps morbidity as well as mortality can be further minimized, thus reducing the number of "survival syndromes." As has been stated, in our opinion subdural effusion is not only a common complication but is probably correctible.[1b] Conversely, if it is not recognized or is neglected, a neomembrane forms, similar to that associated with posttraumatic subdural hematoma. This membraneous envelope is tough, vascular and often laminated. Microscopic examination shows mature fibrocytes, collagenous fibrous tissue and many new blood vessels (see illustration).

One consequence of a persistent neomembrane is constriction of the brain. In contrast to the static size of the adult brain, the infant brain doubles in volume in the first three months and doubles again in the next six months.[2] If the thick sub-

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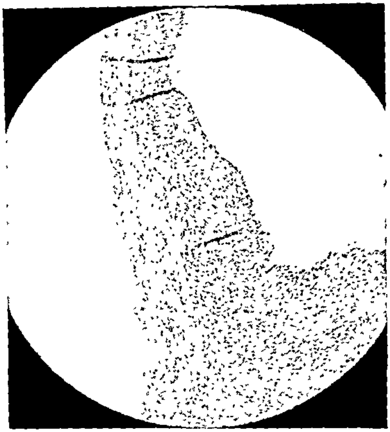
dural membrane is permitted to remain and does not stretch or yield with growth, the brain of the infant is maintained in a confined space by this envelope, and the blood supply and fluid dynamics are further embarrassed. This may eventuate in mental retardation and epilepsy.[3] From the reports of others[4] and our own observations, several generalizations can be made: 1. Subdural effusions occur in a high percentage of cases of so-called "cured" meningitis. 2. The diplococcus, the meningococcus and Haemophilus influenzae are the organisms most likely to cause subdural effusions, but other *forms of meningitis may be responsible*, e.g., those due to E. Typhi and M. Tuberculosis. 3. The effusion is frequently bilateral, though it may begin as a unilateral collection. 4. Finally, drainage of the subdural space is necessary and desirable and usually effects dramatic if only temporary improvement. We have observed subdural *effusions in association with conditions* other than the postmeningitic state: diseases of the respiratory tract and diarrhea, as well as malnutrition — a phenomenon that deserves wider recognition. As has been stated, this "new" syndrome is probably appearing more frequently nowadays since children treated with antibiotics survive and these complications have an opportunity to develop.

The cause of subdural effusions in meningitis and in nonmeningitic states still is not known. It is suspected, however, that any condition that causes a separation of the dura from the arachnoid may cause tearing of the bridging veins in the subdural space, resulting in a small subdural hematoma. The subsequent liquefaction of this blood, highly charged with protein, may exert osmotic tension upon the circulating spinal fluid beneath the arachnoid, drawing it into the subdural space and further increasing the volume. This chain of events may occur after spinal air injection in the infant under 2 years of age, as was pointed out by Smith and Carothers.[5] It may also occur after an operation for hydrocephalus, as reported by Anderson.[6]



Portion of subdural neomembrane surgically removed, showing fibrocytes, new blood vessels and lamination (hematoxylin and eosin). (Reproduced by courtesy of the Armed Forces Institute of Pathology.)

On the basis of the foregoing theory we speculated that excessive withdrawal of spinal fluid for diagnostic purposes in the case of an infant with suspected meningitis might create a similar sagging of the brain and tearing of the bridging veins that could initiate this sequential reaction.

We noted that, in many instances, unnecessarily elaborate laboratory tests required a volume of 10 to 15 cc. of spinal fluid, and that this amount was being regularly withdrawn from infants for diagnostic studies. Dr. Hattie Alexander, an authority on the treatment of bacterial meningitis in children, has stated that in her clinic it is customary to withdraw 10 to 15 cc.[7] She too reports an incidence of

Secondo l'autore queste soffusioni subdurali sono dovute all'eccessiva estrazione di liquido. Infatti se il volume totale di liquido estratto vienne ridotto a 3 cc. le soffusioni non compaiono.

CONCLUSOES

As efusões subdurais surgiram como grave complicação no tratamento da meningite bacteriana.

Sua presença é fàcilmente reconhecida fazendo-se "vaps" subdurais bilaterais através da fontanela aberta em qualquer criança cujas respostas clínicas à terapia antibiótica sejam insatisfatórias.

Na opinião do autor, as efusões subdurais em crianças são inadvertidamente causadas pela remoção excessiva de fluido em qualquer ocasião do diagnóstico. Finalmente, quando o volume total de fluido retirado foi reduzido para 3 cc., observaram que as efusões subdurais que se seguiam à meningite bacteriana eram abolidas.

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A Study of a Series of Myelograms

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MYELOGRAPHY is a roentgen diagnostic procedure using contrast roentgenography to outline the subarachnoid space of the spinal cord.

With ordinary roentgen technics the bony vertebral bodies, arches, processes and facets are visible. Invisible are the spinal cord and its three meninges, the nerve roots, the intervertebral disc and other soft tissues. If the physician can not visualize a soft part, he attempts to fill or outline that part with some substance he can see. For example, he cannot see a stomach; therefore he fills it with barium. With the fluoroscope and roentgen plates he sees the barium and interprets the shadows and densities. A crater or ulcer appears in profile as a projecting finger of barium. In a similar way, with the myelogram one floats a radiopaque oil in the watery subarachnoid spinal fluid. The globule of oil floats like the bubble in a spirit level (reversed—the oil is actually heavier than water). Then with the fluoroscope, the physician can see the oil. He can elevate the patient's head and watch the oil globule float caudad. He can take roentgen plates of any area that seems interesting, for detailed study at his leisure. The oil, appearing like mercury or molten lead, outlines the subarachnoid space. If there is a space-occupying lesion in the cord, the cauda equina or the spinal canal, it may be demonstrated as a transparent area where no oil can flow. The mass may cause a filling defect in the regular shape of the oil globule. The shape of the myelographic shadows must be interpreted and correlated with the clinical data, so that the taking of myelograms becomes one more laboratory test that may (or may not) aid the physician in understanding his case. Like other laboratory procedures, myelographic study is not perfect. It has a percentage of error. It is the purpose of this study to identify the errors and measure their frequency.

Indications.—The indications for myelograms are few and simple:

1. To demonstrate the presence of a mass in the spinal canal. Example: Tumor, herniated nucleus pulposus.
2. To rule out the presence of such masses before any other operation is performed. Example: Before spinal fusion for spondylolisthesis, if the patient has had obvious nerve root pressure.
3. To outline the subarachnoid space in the presence of congenital anomalies. Example: Before operation in cases of spina bifida.

The contraindications are probably harder to specify, but the following conditions may be considered.

1. The presence of infection in the cord or its meninges.
2. Emotional instability in the patient. No specific example need be listed, since all surgeons have encountered patients who attribute their headaches, ulcers and pes planus to a diagnostic lumbar puncture.
3. Any degenerative disease of the brain or cord, such as multiple sclerosis.
4. General systemic debility, or serious illness.

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Conditions. — There are certain conditions that may be judged important or worthless but which have been scrupulously followed in obtaining the series of myelograms here described:

1. The surgeon should state his clinical diagnosis accurately and in writing.
2. The patient should be alert, not sedated, warm and well fed.
3. The patient should have had the theory of the procedure explained to him.
4. The surgeon should describe to the patient every single step of the procedure before it happens.
5. The surgeon should do the lumbar puncture.
6. The surgeon should have full accommodation or "night vision" for fluoroscopic study.
7. The surgeon should observe every single phase of the fluoroscopic examination and request roentgen plates of those scenes which the roentgenologist does not film but which the surgeon may consider important.
8. The patient should be told that he may have a headache, and suitable medicaments should be provided.
9. The roentgenologist's interpretation and the clinician's interpretation of the fluoroscopic data and of the roentgen plates should be made separately and in writing.
10. The patient should remain nearly horizontal after the procedure for at least four hours. The patients in this series were hospitalized overnight.

No elaborate discussion of these conditions is necessary. An ignorant, frightened, startled, half-narcotized patient can hardly be cooperative. The opinion of a competent roentgenologist is enormously valuable; but so likewise are the direct observations of the clinician who has heard the patient's complaints and examined his body. Myelograms should never be taken because of curiosity. If a conservative regime of empiric therapy has been adopted, the myelogram is unnecessary. The myelogram should be used only when the clinician is competent and prepared to utilize the information he gains thereby.

Procedure.—There is tremendous variation in the details of myelographic study. One technic calls for filling the subarachnoid space with 30 cc. of oil. Some insert the lumbar puncture needle at the fifth lumbar interspace. Many surgeons place great emphasis on retrieving the contrast medium, doing multiple punctures to obtain the last few drops. This is the procedure followed throughout the series of myelograms reported here.

1. The back is shaved and prepared.
2. The patient is placed in the left lateral position, knees to chest.
3. Five cc. of 1 per cent procaine hydrochloride is injected with a No. 25 needle intradermally and subcutaneously.
4. A lumbar puncture with a No. 19 needle is done by the surgeon at the interspace between the second and third lumbar spinous processes unless the presence of pathologic change is suspected.
5. Five cc. of spinal fluid is obtained for laboratory determination of the cell count and the protein level. This enables the surgeon to observe the flow and clarity of the spinal fluid.
6. Three cc. of the iodized oil contrast medium is slowly injected with no great pressure, the oil being allowed to flow smoothly through the No. 19 needle.
7. The stilet is replaced in the lumbar puncture needle but the needle is left *in situ*.
8. With the surgeon's hands placed firmly on the patient's torso, the patient is instructed to turn to the prone position. (The phrase "flat on your belly" is often used nowadays, since that phrase is almost impossible to misunderstand. If the patient turns the wrong way it could be dan-

TABLE 1.—*Myelographic Diagnosis*

	Total		*Male Patients*		*Female Patients*	
Correct Myelographic Diagnosis	*Cases*	*Decisions*	*Cases*	*Decisions*	*Cases*	*Decisions*
Normal myelogram, no lesion	2	2	1	1	1	1
"Positive" myelogram, 3 lesions	1	3	1	3	—	—
"Positive" myelogram, 2 lesions	9	18	5	10	4	8
"Positive" myelogram, 1 lesion	51	51	37	37	14	14
"Positive" myelogram, 1 lesion, plus 1 "false positive"	6	6	6	6	—	—
	69	80				

	Total		*Male Patients*		*Female Patients*	
Wrong Myelographic Diagnosis	*Cases*	*Decisions*	*Cases*	*Decisions*	*Cases*	*Decisions*
Normal myelogram, 2 lesions present at operation	2	2	2	2	—	—
"Positive" myelogram, no lesions present at operation	6	6	3	3	3	3
"Positive" myelogram, 1 lesion, plus 1 "false positive"	6	6	6	6	—	—

gerous.)

9. The roentgenologist tapes lead skin markers to identify the right side and the individual vertebrae. The surgeons don protective gowns. Lights are extinguished. Glasses are raised.

10. The location of skin markers is determined fluoroscopically and corrected if necessary.

11. The oil is located, and the table is tilted (either way) slowly and gently. It is important to keep the 1/10 ounce of oil together in a fat little globule. If the globule becomes elongated to a thin string of radiopaque material, it cannot outline any masses that may be in the area.

12. In a lumbar myelogram, examination includes the caudal sac near the second sacral vertebra and extends cephalad at least two interspaces above the location of the lesion as specified by the physician. It is kinder and wiser for the physician to tell the roentgenologist where he may expect to locate the lesion.

13. Roentgen films are taken in the anteroposterior, left oblique and right oblique views of all suspicious areas.

14. The medium is placed under the spinal needle at conclusion of the myelographic procedure. When the fluoroscopic study is concluded, the room is lighted. Such oil as can easily be obtained is aspirated. If 2 cc. is obtained, it is considered plenty indeed. If only 1 drop is withdrawn it is accepted, and the patient is "needled" no more.

15. The patient is transferred supine to a litter and then to his bed, where he remains head down for at least four hours.

Material.—This series of myelograms was taken by one surgeon, with several roentgenologists. There are 125 cases, in which 76 patients were men and 49 were women. The average age of the men was 39 years; that of the women, 37.6 years. Of the 125 myelograms, there were 101 (82 per cent) that showed filling defects; 24, or 18 per cent, seemed normal. It may be interesting that the men had 65 positives and 13 negatives. Roughly then, a positive myelogram is obtained in 8 out of 10 cases when the cases are selected and a diagnosis made prior to the roentgen procedure.

The relation of the myelographic to the clinical picture is the most important information obtained from this study. Of 101 positive myelograms, 59 per cent confirmed the clinical diagnosis exactly; 19 per cent confirmed the presence of a space-occupying intraspinal lesion, but corrected the location specified by the doctor; 22 per cent confirmed the clinical diagnosis and supplemented it with additional filling defects. It is possible to interpret these statistics to prove that in 81 per cent of the cases the surgeon predicted the lesion accurately. Such an interpretation is rashly optimistic. The same three values also clearly indicate that the surgeon using clinical diagnoses only could have found himself exploring the wrong interspace in almost half of the cases. If the agreement between clinical diagnoses and myelograms were perfect, there would be no need for myelograms. Until his skill in diagnosis reaches such perfection, the surgeon can hardly afford to operate without a myelogram.

Multiple filling defects were surprisingly frequent. Eighteen men and 5 women showed these, to make up 22 per cent of all whose myelograms were "positive." Of the 65 men with positive defects, 4 underwent no operation, and the presence of the defects cannot be confirmed; 1 had 3 herniated nuclei pulposi; 5 had 2 herniated nuclei pulposi; 2 had hemangiomatoma; 6 had 1 herniated disc plus 1 "false positive." Of the 5 women with multiple defects, 1 was not operated on; 4 had 2 herniated nuclei pulposi.

"False positive" myelograms are detected only by operation. The surgeon finds no space-occupying lesion where the myelogram showed a filling defect. Single instances of this occurred in 6 cases; 3 of the patients were men and 3 were women. This means that both the clinical diagnosis and the myelogram were "positive," that the surgeon was operating at the correct interspace, that the myelographic markers had been properly placed, and that a normal spinal canal was present. In addition to these 6 "false positive" results, there were 6 cases (all with male patients) in which the myelogram showed multiple defects, 1 of which was a "false positive."

"False negative" myelograms are also possible. This means that a clinical diagnosis is made, the myelogram is normal, operation is performed in spite of this, and a space-occupying lesion is demonstrated. There were 2 such cases in this series. In both, the patients were operated on by another surgeon. The pathologic condition was present, but the myelogram did not demonstrate it. The number of "false negative" myelograms would be slightly larger if the roentgen interpretations considered were those of the roentgenologist, but in this study the interpretations were those of the surgeon. Since both "false positive" and "false negative" myelograms are possible, the question arises: just how accurate are myelograms? Table 1 lists the number of decisions made by roentgen study and checked at operation.

In the cases of 77 patients operated on, therefore, 94 decisions or determinations were made by myelogram, of which 80 (85 per cent) were correct, and 14 (15 per cent) were erroneous.

If there is disagreement between the roentgenologist's and the surgeon's interpretation of the myelogram, how great is this difference of opinion? In this series of 125 cases, the surgeon and the roentgenologist agreed on the absence of lesions 26 times and on their presence 89 times; in other words, the two were in harmony in 92 per cent of the cases. In the 10 cases in which their opinions differed, the roentgenologist was proved correct by the operation in 1 case and the surgeon in 6 cases. On 3 cases no operation was performed by which the opinion of either could be verified.

Five per cent of operative patients had tumors. Three were hemangiomas and 1 a teratoma of the filum terminale. Only 1 hemangioma and the teratoma were recognized as tumors from the myelogram before the operation.

The most common site of herniated nucleus pulposus is often said to be at the fifth lumbar disc interspace. This was not true in the series here reported. The fourth lumbar interspace was the most common site for myelographic filling defects (Table 2). This is not a study of surgical cases, but when the surgical data are considered, L5 is twice as frequent as L4 in women, and L4 is twice as frequent as L5 in men (Table 3). No interpretation of these findings is offered. Perhaps a larger series of cases would change the proportions.

TABLE 2.—*Location of Defects by Myelogram*

	Female Patients	*Male Patients*	*Total*
L1	—	1	1
L2	—	1	1
L3	5	10	15
L4	15	45	60
L5	18	19	37

TABLE 3.—*Location of Lesions at Operation*

	Female Patients	*Male Patients*	*Total*
L1	—	—	—
L2	—	1	1
L3	1	4	5
L4	7	32	39
L5	15	16	31

SUMMARY

Myelograms done in 125 consecutive cases are reported. Eighty-two per cent of all showed positive filling defects. The agreement between clinical diagnosis and *positive myelographic* evidence is as follows: In 59 per cent the clinical diagnosis was confirmed exactly; in 19 per cent the location of the lesion was corrected; in 22 per cent the clinical diagnosis was confirmed and additional filling defects were present. The incidence of multiple defects was 22 per cent. In 12 cases there were "false positive" myelograms, and in 2 there were "false negative" myelograms, when checked by operation.

The accuracy of the myelograms is computed by the number of decisions made by myelogram and proved or disproved by operation. The myelogram is correct in 85 per cent of the cases.

The percentage of agreement of myelographic interpretation between radiologist and surgeon is 92 per cent.

The indications and contraindications for myelographic study are mentioned. Specific conditions are suggested. The procedure used in the series reported is *outlined.*

RÉSUMÉ

L'auteur présente les myélogrammes de 125 cas consécutifs. Dans 82% des cas des défauts de remplissage ont été constatés. Le rapport entre le diagnostic clinique et le myélogramme "positif" a été le suivant: 59% des cas ont confirmé le diagnostic clinique, 19% ont permis de corriger la localisation diagnostiquée et ont révélé des défauts de remplissage supplémentaires. La fréquence des lésions multiples a été de 22%. Il y a eu 12 cas de "faux myélogrammes positifs," et 2 cas de "faux myélogrammes négatifs" vérifiés à l'opération.

La précision des myélogrammes a été évaluée selon le nombre de [illegible]ons opératoires dictées par [illegible]

l'intervention a confirmé ou infirmé indications.

Les diagnostic établis grâce aux myélogrammes ont été exacts dans 85% des cas.

Les diagnostics établis en collaboration entre le radiologue et le chirurgien quant à l'interprétation des myélogrammes se sont révélés exacts dans 92% des cas.

Les indications et contre-indications de la myélographie sont énumérées. L'auteur suggére quelques conditions spécifiques et décrit la technique utilisée dans les 125 cas rapportés.

ZUSAMMENFASSUNG

Es wird über eine Reihe von 125 aufeinander folgenden myelographischen Untersuchungen berichtet. In 82 Prozent wurden positive Füllungsdefekte beobachtet. Ein Vergleich der klinischen Diagnosen mit den "positiven" Myelogrammen ergab folgendes: In 59 Prozent wurde die klinische Diagnose benau bestätigt; in 19 Prozent wurden die klinische Lokalisierung durch das Myelogramm korrigiert und zusätzliche Füllungsdefekte beobachtet. Das Vorkommen mehrfacher Defekte betrug 22 Prozent. In 12 Fällen ergab die Operation, dass es sich um "falsche positive" Myelogramme handelte, und in 2 Fällen lagen "falsche negative" Myelogramme vor.

Die Zuverlässigkeit der Myelogramme wurde nach der Anzahl der auf Grund der Röntgenbilder getroffenen Entscheidungen und der bestätigenden oder widerlegenden Operationsbefunde berechnet.

In 85 Prozent der Fälle war das Myelogramm korrekt.

Der Prozentsatz der Fälle, in denen der Röntgenologe und der Chirurg in der Beurteilung des Myelogramms übereinstimmten, betrug 92 Prozent.

Die Indikationen und Gegenindikationen der myelographischen Untersuchung werden erwähnt. Besondere Untersuchungsbedingungen werden in Vorschlag gebracht, und die in der vorliegenden Serie angewandte Methode wird umrissen.

RIASSUNTO

Sono riportato i mielogrammi presi in 125 casi conscutivi. Nell'82% dei casi si osservò un difetto di riempimento. Il rapporto fra diagnosi clinica e riempimento positivo fu il seguente: nel 59% si confermò esattamente la diagnosi clinica; nel 19% venne corretta la localizzazione fatta con la sola diagnosi e si misero in evidenza altri difetti di riempimento. La frequenza di difetti multipli fu del 22%. In 12 casi si ebbero dei "falsi mielogrammi positivi" e in due casi dei "falsi mielogrammi negativi," come si ebbe a riperire durante le operazioni.

L'accuratezza dei mielogrammi si potè computare dal numero delle decisioni prese coi mielogrammi stessi e confermate o no dall'intervento chirurgico.

I mielogrammi furono eseguiti nell'85% dei casi.

La percentuale di accordo fra radiologo e chirurgo, per quanto riguarda l'interpretazione dei mielogrammi, fu del 92%.

Vengono qui ricordate le indicazioni e le controindicazioni per la mielografia; vengono suggerite delle condizioni specifiche e sottolineata la procedura usata nei casi riportati.

RESUMEN

Se reportan 125 mielogramas tomados en casos consecutivos. En 82 por ciento defectos de llenamiento positivos fueron observados. La concordancia entre el diagnóstico clínico y el mielograma "positivo" fué como sigue; en 59 por ciento confirmó el diagnóstico clínico exactamente; en 19 por ciento corrigió la localización concebida en el diagnóstico y reveló defectos de

llenamiento adicionales. La incidencia de defectos múltiples fué 22 por ciento. En 12 casos hubo mielogramas "falso positivos" y en 2 casos mielogramas "falso negativos," como se comprobó en la operacion.

La exactitud de los mielogramas se computó por el número de decisiones hechas con base en los mielogramas y comprobadas o no, durante la operación.

El mielograma estaba correcto en 85 por ciento de los casos.

El porcentaje de casos en que al radiólogo y el cirujano coincidieron en cuanto a la interpretación de los mielogramas fue 92.

Las indicaciones y contraindicaciones para estudios mielográficos se mencionaron. Se surgieren condiciones específicas y se delineó el procedimiento usado en la serie reportada.

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The great physician, Sir William Osler, who made his reputation in the United States and died at Oxford in the Regius Professorship of Medicine, was a famous bibliophile. As an impoverished medical student in Canada he began his collection with a copy of *Religio Medici* by Sir Thomas Browne and that volume was placed in his coffin at his death.

Even more than Bacon but in a very different way, Browne (1605-82) is a figure to conjure with. Profoundly religious, he was dangerously superstitious, at least as far as witches were concerned, and yet he seems to have been more subtly, penetratingly, interested in nature than was Bacon, and did more systematic observation and experiment. He was born in London, studied at Oxford and received his medical training and degree on the continent. Practicing medicine in the little town of Norwich, he kept out of the religious and political storms of the day.

His first book, *Religio Medici,* written for his own private satisfaction was first published without his permission in 1643. His fascinating and weirdly learned treatise on popular errors, *Pseudodoxia Epidemica* was published a few years later, and *Hydriotaphia* or *Urne-Burial,* and *The Garden of Cyrus* in 1658. Inspired by the discovery of some ancient sepulchral urns at Norfolk, Browne set down his wondrous reflections on funeral ceremonies, on immortality and annihilation. The final chapter may well be the most gorgeous prose in the English language.

—*Houston*

Obstetric and Gynecologic Surgery

Prolapse of the Vagina After Hysterectomy

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PROLAPSE of the vagina and of the "remaining cervix" does not seem to be particularly frequent. I, personally, have had but 12 cases within fifteen years, in only 9 of which the patients were operated on. I am of the opinion that only the second and third stages of prolapse, within a certain degree of vulvar protrusion, are important and deserve any special surgical interest, for a slight lowering of the bladder and a moderate swoon of the perineal fundus, causing a sort of first-stage prolapse, are of frequent occurrence in hysterectomized patients and are not important.

The rarity of the condition is due to the fact that multiparity remains the main cause of prolapse, and the lesions that require hysterectomy, as a rule, cause primary or secondary sterility.

On the other hand, vaginal atrophy and infundibular sclerosis of the vaginal fundus are the rule after hysterectomy and are unfavorable to the development of prolapse, since thickened and infiltrated vaginal walls find difficulty in unfolding themselves. This rule, however, is not absolute. especially when the operation has preserved all or part of the ovaries and the presence of normal estrogenic function may therefore be assumed. Of the patients observed, only 2 were aged women. The others had undergone hysterectomy before reaching the age of 40, and in their cases the prolapse had occurred soon, i.e., from one to three years after the initial operation. It has been ascertained in most cases that insufficiency of the perineal fundus due to anterior deliveries was the main cause of prolapse. The insufficiency is not necessarily due to an obstetric rip with apparent rupture of the fourchette; it results mainly from the tearing of the posterior commissures of the levator muscles, which I described in detail at the time of the French gynecologic meeting in 1954. The case that posed the most difficult problem, however, was that of a 45-year-old multipara.

Treatment of vaginal prolapse after hysterectomy is never simple. It is necessary to make a distinction between the prolapse that occurs after subtotal hysterectomy (with or without reservation of the adnexae) and that which occurs after total hysterectomy.

In the first category of cases (subtotal hysterectomy) two sets of circumstances are brought together: a favorable one, in that a utilizable cervical stump is maintained by means of adequate high fixation by the abdominal approach, and an unfavorable one, in that the cervical stump may in certain cases constitute the beginning of the prolapse as well as its aggravation by hypertrophic lengthening.

Of course, ovariectomy in cases of subtotal hysterectomy leads to progressive atrophy of the cervical stump and thus lowers the risk of hypertrophic lengthening. If one keeps as far as possible, how-

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*Professor Agrege.

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ever, to the highly recommended performance of a conservative operation whenever the condition of the adnexae allows it, preservation of ovarian function will aggravate the risk of hypertrophic lengthening of the cervix; it is no longer the anterior vaginal wall that is lowered—the cervix becomes inserted itself into the vulvar tear, causing it to gape, while the area of the isthmus and the deep scar of the cervix remain at about the same level. Estimation of this lengthening of the cervix is an essential part of the clinical examination in such cases; without it, one will always meet with failure.

In the second category (total hysterectomy) there is no support for the vaginal dome except the fibrocellular scar, which is usually sufficient to prevent prolapse. The highly important lowering of the vaginal walls, however — they are sometimes completely reversed, like the fingers of a glove—remains possible under three conditions:

1. When the greatest pressure is centralized on the axis of the vagina or on the vaginal scar, either by the viscera or by the intraperitoneal liquid output. In these circumstances the acute prolapse is a complication due to the intraperitoneal fluids.

2. When the vaginal walls are primarily thinned and loosened from the cellulomuscular tissue. The main role here is played by multiparity.

3. When the perineal fibromuscular fundus is insufficient, especially when the indispensable obliquity of the perineal angle has been suppressed.

There is a double aspect to the surgical problem in cases of prolapse following hysterectomy:

1. How to treat prolapse when it occurs. Is it possible to prevent prolapse by a modification of the technic of hysterectomy?

In my opinion the surgical indications after subtotal hysterectomy may be summarized as follows:

Clinical study and examination by speculum may show a normal cervical stump, or the cervix may even be atrophied. There is no lowering of the cervix, even when the patient exerts violent abdominal pressure; there is only an unfolding of the anterior vaginal walls, with isolated or associated cystorectocele. These conditions are always of obstetric origin and exist prior to hysterectomy. It is not a question, therefore, of prolapse following hysterectomy, but only of aggravation of a prolapse existing prior to the operation and overlooked. I have had 2 such cases. In this situation a simple colpoperineorraphy seems to be sufficient. It is the only type of case in which a purely muscular operation can be adequate, be it the Manchester, the Crossey Halban or any other technic. If the cervix is normal, I see no reason to amputate it. It has a possible physiologic role in the sexual equilibrium, and if it is preserved the patient will not feel physically diminished as she may feel after an amputation.

In other cases the cervix is only slightly lowered during abdominal pressure. The unfolding of the vaginal walls is little apparent. The cervix, however, is vertically stretched; it takes on the appearance of an elephant's trunk. In this case a greater or lesser colpoperineorraphy or even colpocleisis will bring about no valuable results. As long as the cervix remains, it will insert itself into the different vaginal planes and will cause recurrence of prolapse. The patient with whom I had the greatest trouble was in this category. I made the mistake of performing a tight classic colpoperineorraphy on a multipara, aged 40, who presented a prolapse of this type after hysterectomy, with preservation of the ovaries, for a fibroma. A prolapse occurred soon after, the cervix coming through the vulva less than one year after the operation. [illegible] il-ure occurred a few months later, after abdominal fixation of the cervical stump. I obtained lasting success by the simple operation I should have begun with: flat amputation of the cervix by the Bonney technic. In this case, therefore, a satisfactory result was obtained by slight lowering of the vaginal dome, with some unfolding of the vaginal walls, but with a long, slender, conical cervix. In my opinion the method of choice is cervical amputation, depending on the case, with anterior and posterior colpoperineorraphy. This is the triple perineal operation of which Magendie in France has been the chief supporter.

There are cases, finally, in which the vaginal dome is lowered but seems mainly drawn away by the cervical stump. It is the cervix that comes down, carrying along and unfolding the vaginal walls. The cervix is not lengthened; it is short and often thick, inflamed and metritic. An operation by the vaginal approach, in my opinion, would not be sufficient in such a case. Of course, the cervical stump must be stabilized by high abdominal fixation, either by use of the stumps of the round ligaments and the lumbo-ovarian stumps or by direct and solid fixation of the cervical stump in the sheath of the right rectus muscles, which is a simple operation to perform when the prolapse is severe.

It may seem imprudent to leave such a cervix in its place, and many would prefer to perform total instead of subtotal hysterectomy, as it is necessary to reoperate afterward by the abdominal approach. If the cervix is clearly metritic I agree, but if the lesions are unimportant and superficial, i. e., if they heal quickly (within three weeks) in response to superficial electrocoagulation, I am convinced that it is possible to preserve the cervix, the importance of which lies in the fact that it is the best physiologic support of the vagina.

But there is another problem. Ameline, of France, recently insisted upon the danger of creating a depression and an abnormal depth of the Douglas *cul de sac* by drawing the cervix or the cervical stump too high and too far forward. This would create a favorable environment for the pseudohernia of Douglas. For this reason I always perform a Douglas obliteration, after the technic of Marion, at the time of fixation of the cervical stump.

Of course, the extent of either the cystocele or the rectocele may necessitate a complementary perineal operation.

In the same way, for elderly women who do not desire to preserve sexual function, prolapse following hysterectomy justifies an operation after Lefort or a colpocleisis, a simple operation to perform, which I always recommend in such cases.

Of course, high fixation of the cervical stump after total hysterectomy is no longer possible, and total or partial colpocleisis or colpectomy will involve great difficulties in dissection. The absence of cleavage at the level of the vaginal scar, the risk of hurting the ureter in this area, which is so highly modified, anatomically speaking, the absence of support given by the uterine cervix to dissection and cleavage make these operations extremely difficult.

I consider it preferable to perform an abdominal operation in such cases. According to the individual need, I either perform reimplantation on the vaginal scar of a tubo-uterine pedicle or use the round ligament stump. In France, Diamant-Berger proposed an operation with which I am not personally familiar, using an aponeurotic pedicled strip which, coming from the sheath of the right rectus muscle, is fixed upon the vaginal scar under the peritoneum.

In such cases I perform what I consider the best operation, i. e., the Douglas blind-alley obliteration by means of circular stitches, the last one fixing what is left of the ligaments, round and uterosacral. I recover this zone with vesical peritoneum lifted in the Pestalozza manner to "blind out" the whole Douglas cavity and prevent reversal of the vaginal dome.

As I have stated, the treatment of prolapse following hysterectomy is not simple. It is therefore best to prevent prolapse in the first place. By application of the following principles, this, in my opinion, is possible:

1. Test the real value of the perineum and perform a complementary simple colpoperineorraphy during the hysterectomy if a perineal deficiency brings about a prolapse.

2. Prefer total to subtotal hysterectomy when there is hypertrophic lengthening of the cervix, especially if the ovaries are to be preserved.

3. Fix the cervical stump carefully if subtotal hysterectomy is performed, either by reimplanting the round ligaments on the stump or by performing the excellent Desmarets operation, to keep the tubes and the ovaries in their respective places and reimplant them in the surface of the stump section. This operation is possible in the surgical treatment of fibroma or even of an important infectious lesion of the tubes that does not require ablation. It offers not only excellent fixation, which prevents prolapse, but the possibility of maintaining some menstrual function.

4. In performing total hysterectomy it is still possible to fix the pedicles on the borders of the vaginal scar. It is easier to attend to this fixation during hysterectomy than to do it long afterward, when an obvious prolapse has occurred.

In order to prevent an eventual prolapse, it is useful to stitch the colic region to the bladder, which isolates the pelvis and prevents abdominal pressure on the vaginal dome. Always I operate in this way in case a vaginal drain is used.

SUMMARY

Vaginal prolapse after hysterectomy is provoked by perineal deficiency but not by perineal deficiency alone. When vaginal prolapse is clinically apparent, ordinary perineal operation is rarely sufficient.

In some cases one has either to treat hypertrophic lengthening of the cervix by complementary operation or to treat lowering of the vaginal dome by high abdominal fixation. Obliteration of the *cul de sac* of Douglas, according to the author, is the best way to solve these difficulties.

RIASSUNTO

Il prolasso vaginale, dopo isterectomia, è provocato da una deficienza perineale, ma non solo da essa. Quando il prolasso vaginale è clinicamente manifesto, ben raramente è sufficiente la sola operazione perineale. In alcuni casi o si deve correggere l'allungamento ipertrofico con una operazione o l'abbassamento della cupola vaginale con un fissazione addominale alta.

Secondo l'autore il miglior modo per ovviare a queste difficoltà è quello di obliterare il cavo del Douglas.

ZUSAMMENFASSUNG

Ein nach Gebärmutterresektion auftretender Scheidenvorfall wird durch Schwäche des Dammes aber nicht durch diese allein hervorgerufen. Wenn ein Scheidenvorfall klinisch in Erscheinung tritt, reicht eine gewöhnliche Dammoperation selten zu seiner Behebung aus.

In manchen Fällen muss man entweder die hypertrophische Verlängerung durch einen weiteren Eingriff oder das Sinken des Scheidengewölbes durch hohe abdominale Fixierung behandeln.

Den besten Weg, diese Schwierigkeiten zu beseitigen, sieht der Verfasser in einer Verödung des Douglasschen Raumes.

RESUMEN

El prolapso vaginal post histerectomía es provocado por deficiencia perineal pero no solo por esta causa. Cuando el prolapso vaginal es aparente clinicamente, una operación perineal ordinaria, raras veces es suficiente.

En algunos casos hay que tratar el alargamiento hipertrófico por una operación asociada ó tratar el descenso de la cúpula vaginal por medio de fijacion abdominal alta.

La obliteración del fondo de saco de Douglas, es de acuerdo con el autor, el mejor medio para resolver estas dificultades.

RÉSUMÉ

Le prolapsus vaginal après hystérectomie est provoqué par une déficience du périnée, mais celle-ci n'en pas la seule cause. Lorsque le prolapsus vaginal est cliniquement apparent, l'opération périnéale ordinaire est rarement suffisante.

Dans certains cas il faut, soit traiter l'hypertrophie au moyen d'une intervention associée, soit traiter la ptose du dôme vaginal par un fixation haute.

L'oblitération de la cavité de Douglas est, selon l'auteur, le meilleur moyen de résoudre ces difficultés.

There is on record the overwhelming elation felt by scientists at the moment of discovery, elation of a kind which only a scientist can feel and science alone can evoke in him. Kepler testified to it in his *DeHarmonice Mundi,* published in 1916, in which he announced the discovery of his "Third Law," connecting planetary periods and distances. He writes ". . . nothing holds me; I will indulge in my sacred fury; I will taunt mankind with the candid confession that I have stolen the golden vases of the Egyptians, in order to build of them a tabernacle to my God, far indeed from the bounds of Egypt. If you can forgive me, I shall rejoice; if you are angry, I shall bear it; the die is cast, the book is written, whether to be read now or by posterity I care not: it may wait a hundred years for its reader, if God himself has waited six thousand years for a man to contemplate His work. . . ." The excitement of the scientist making a discovery is an *intellectual* passion, telling that something is *intellectually* precious and, more particularly, that it is *precious to science.* And this affirmation forms part of science.

—Polanyi

The Obstetric Importance of the "Long Pelvis"

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IN studying the structural abnormalities of the bony pelvis in textbooks on Obstetrics, one notes that the rachitic respectively flat pelvis and the generally contracted pelvis are the most important deformities. The obliquely and transversely contracted pelvis is not as common a cause of complications.

In 1949 one of us (Kirchhoff) published a monograph entitled *The Long Pelvis* and added this formerly neglected variety of pelvic deformity to the types already generally known and recognizable by external inspection. For some time it had been well known to anatomists as "assimilation pelvis," though it is surprising that up to that time obstetricians had not paid adequate attention to it. In clinical studies comprising over 200 cases the obstetric importance of this type of pelvis was convincingly explained (Kirchhoff, 1949). Therefore, knowledge of hitherto inexplicable obstetric complications in the sense of a standstill or of an unclear pathologic type of delivery was enlarged.

The functional importance of an assimilation pelvis can be interpreted roentgenologically only in connection with the clinical picture.

"Assimilation" refers to an anatomically conditioned peculiarity of the vertebral column. One vertebra takes the place of a vertebra of an adjacent part of the vertebral column, and resembles it. Obstetricians are naturally especially interested in abnormalities of the lumbosacral region in its relation to a low or high assimilation pelvis. The question of the functional importance of the vertebra concerned is of the utmost importance; i e., whether or not this vertebra already belongs to the pelvis and is thereby decisively influencing the shape of the pelvic inlet. An answer to this question can be expertly given by a lateral roentgenogram taken by the Guthmann method. Only in this way is it possible to see whether the "lumbosacral transitional vertebra" and the sacrum are forming an important functional obstacle by limiting the birth canal. The degree of assimilation recognizable in the anteroposterior roentgenogram in no way influences the position of the transitional vertebra; the two are entirely independent of each other. The last lumbar vertebra may belong functionally to the sacrum without showing any signs of assimilation ("functional high assimilation"). Kirchhoff's detailed obstetric-clinical and informative roentgenologic studies resulted in a typical and reiterating syndrome. If the transitional vertebra tends more toward the sacrum, visible by the greater inclination of its anterior surface toward the symphysis, one finds a remarkable elongation of the bony birth canal by one vertebral body, i. e., practically by 2 to 3 cm. The pelvis becomes too long. This characteristic, which has functional importance, led to the conception of the "long pelvis." There are, however, other noteworthy peculiarities.

If another vertebra is added to the sacrum, the promontory is elevated (high promontory); the plane of the pelvic inlet is correspondingly tilted, and the pelvic inlet changes its shape. In these cases the

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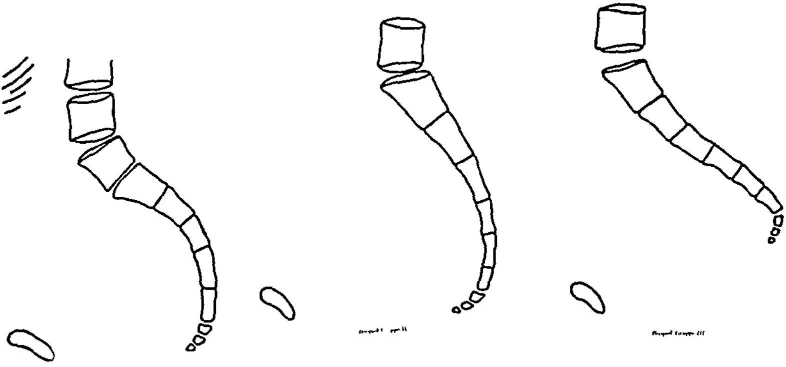
measurement of the conjugata vera (conjugata vera I) is enlarged in comparison to the norm. One who is not informed about this pelvic anomaly may be easily deceived, and a missed diagnosis may have severe consequences. In reality the "true" obstetrical conjugate (conjugata vera II), i. e., the really narrowest straight diameter of the birth canal runs at a level of one or even two vertebral bodies lower than the promontory. In such cases one is dealing with a "double promontory."

The peculiarities discussed up to now result from the "transitional vertebra" with its sacral tendency, and refer exclusively to the pelvic inlet. Speaking of the "long pelvis," there are also other interesting points concerning the lower parts of the birth canal, which are the consequence of the shape and structure of the os sacrum. In studying roentgenograms of the "long pelvis," one observes besides a more erect position, a more or less express flattening out of the sacral concavity, which influences the mechanism of labor by stretching the sacrum and thereby further elongating the already long bony birth canal. In typical cases one finds a cylindric bony birth canal, the straight diameters of the planes of which scarcely differ at all. This structural deviation, combined with the transitional vertebra, explains the numerous obstetric complications that may arise if one is dealing with a long pelvis, with the oval-shaped, transversely contracted superior straight playing an additional part.

Clinical Data on the Long Pelvis (Winter)

	Leipzig and Kiel		*Lubeck*		*Material for Comparison*
	Number of Cases	*%*	*Number of Cases*	*%*	*Leipzig 1938 39*
Total number of cases	212		56		8,400
Spontaneous deliveries	109	51.5	35	62.5	85 %
Cesarean sections	47	22.2	15	26.8	2.7%
Forceps deliveries	39	18.4	5	8.9	6.2%
Perforations	9	4.2	2		0.5%
Extractions	8	3.7	—		
Brow and face presentations	9	4.2	2		1.5%
Breech presentations	13	6.2	7	12.5	3.6%
Positio occipitalis pubica et sacralis	4		8	14.3	
Occipitoposterior presentations			17	30.4	
Maternal mortality	5	2.3	—		0.4%
Infant mortality	15	7.1	2		5.5%
Duration of labor, hours	24		19		

In this table the data on the long pelvis in cases observed at the Women's Hospital of the Universities of Leipzig and Kiel (Kirchhoff) are compared with the results of corresponding examinations during Kirchhoff's directorship of the Municipal Maternity Hospital of Lübeck. An evaluation of these data can be made by comparing them with the total number of obstetrical patients delivered at the Women's Hospital of the University of Leipzig during 1938 and 1939. Note that the deductions from the previous investigations in Leipzig and Kiel exert a noticeable influence on the figures from Lübeck: The number of spontaneous deliveries is increased, maternal and infant mortality are decreased. The number of occipitoposterior presentations is remarkably high.



Left, example of "long pelvis," Type 1. Fifth lumbar vertebra has expressively sacral tendency. Double promontory easily recognizable. Plane of superior straight is steep. Smallest diameter below promontory 1. External measurements within normal limits. *Center*, example of "long pelvis," Type 2. High promontory, steep pelvic inlet. Only one promontory, sacrum elongated and flattened, sacral concavity still existing. *Right*, example of "long pelvis," Type 3. Promontory is nearly straight above symphysis. Sacrum totally straightened, forming a "one-way street" without curves. Smallest diameter far below promontory. Disproportion in spite of long conjugata vera.

It is interesting that, at the same time, American authors (Caldwell and Moloy), studying the pelvis, also came to conclusions which to a great extent are in accordance with those aforedescribed. They distinguish four different types of pelvis. Their "anthropoid" type corresponds with the special pelvic type described by myself. They also stressed the length of the pelvis and the fact that the pelvic inlet appears, anteroposteriorly, more or less like an oval. They also pointed out the high frequency of complications *sub partu*.

I myself distinguish three different types of long pelvis, which differ in their obstetric importance.

Type 1 (see illustration, A).—Assimilation-transitional pelvis: Only the lumbosacral transitional vertebra with sacral character has functional importance: high promontory, double promontory, false conjugata vera I. The birth canal is elongated, the plane of the superior straight diameter is steep.

Type 2 (see illustration, B).—Assimilation pelvis with unchanged shape of sacrum (6 sacral vertebrae); assimilation vertebra belongs anatomically and functionally to the normally shaped sacrum. Only one promontory forms the narrowest diameter. There is certain flattening out of the sacral concavity. The pelvis is elongated with a steep pelvic inlet and a high promontory.

Type 3 A (see illustration, C).—Assimilation-canal pelvis with 6 sacral vertebrae; the most outstanding type of long pelvis. Additional elongation due to stretching of the sacrum, missing sacral concavity. Promontory remarkably high; very steep pelvic inlet. Length of conjugata vera I above average, "true" obstetric conjugata vera (conjugata vera II) situated between the first and second sacral vertebrae, often shortened.

Type 3 B.—Canal pelvis with 5 sacral vertebrae and with a probable but not proved assimilation: Canal hape o vis leads to a certain elongation, despite regular number of vertebrae. Otherwise no great difference from Type 3 *A*.

To sum up, the following characteristics of the long pelvis are known to be "troublemakers" of obstetric importance:

(1) elongation of the bony birth canal;
(2) formation of a "double promontory";
(3) A cylindrically shaped birth canal, and a
(4) pelvic inlet appearing anteroposteriorly like an oval.

In a high percentage of cases these "troublemakers" lead to deviations from the normal course of delivery. The high promontory with the thereby conditioned steep plane of the superior staight diameter prevents optimal presentation of the presenting part. In normal labor the axial pressure of the fetus is usually directed vertically toward the plane of the superior straight diameter. The high and prominent promontory, no longer serving as a splint, induces the head to hit the pelvic inlet at an acute angle, thereby producing a posterior asynclitism. The anterior parietal bone rises above the symphysis (Zangemeister, positive), and in spite of normal measurements there seems to be an initially inexplicable cephalopelvic disproportion. As the pelvic inlet of the long pelvis often resembles an oval posteriorly, one frequently encounters two other complications, the positio occipitalis pubica or sacralis and the persistent occipitoposterior position. Beside these abnormalities of position one observes a higher number of other abnormal presentations—breech, transverse, brow and face—the incidence of which is above the average. The presence of a smallest diameter *below* the promontory (Types 1 and 3) prevents the engagement of the fetal head and leads to a standstill of labor without perceptible cause.

Additionally a good number of midpelvic and outlet complications of labor are due to a long pelvis, especially of Type 3. The stretched straight sacrum combined with the lacking "tolerance space" forms an obstacle to the normal course of the second phase of labor, i. e., the engagement, bending and rotating of the presenting fetal part. In such cases the result is a standstill of labor; one observes a midpelvic transverse arrest or deflection of the fetal head, or meets with inexplicable outlet difficulties, the persistent occipitoposterior positions being a frequent abnormality. The bony birth canal, which is too long and unfavorable to the progress of labor, as well as a definite tendency toward uterine inertia in a woman with a long pelvis, results in prolonged labor, exhaustion of the mother and fetal distress.

The complications described, which should not be minimized, stress the importance of this type of pelvis and point to the dangers menacing the mother as well as the infant. Disturbances in connection with the pelvic inlet deserve special attention.

If one observes abnormalities of position and presentation, or standstill of labor with arrest of the fetal head above or within the superior straight diameter, if there is an inexplicable cephalopelvic disproportion, and if one does not succeed in turning the patient to one side according to the prevalent rules, one must think in time of the long pelvis and control one's thinking and therapeutic procedures by taking a lateral roentgenogram. Only half of patients all with long pelvises will deliver spontaneously (Kirchhoff). Cesarean section is necessary for about 25 per cent, the rest have to be delivered by operative procedures (forceps, perforation). H. Winter's observations were similar. He had available more recent material for comparison and observed, additionally, a decrease of maternal and fetal mortality, which he is justified in considering a pleasing result of the practical benefits derived from the new-found knowledge of the long pelvis (see table).

During the past few years a number of others—H. Walter, H. O. Kleine, Fochem, Froewis and Narik—have written about this type of assimilation pelvis. All of these authors confirmed the importance of the newly described pelvic abnormality by observations of their own, and were unanimous in pointing to the high frequency of operative complications. H. O. Kleine stressed the peculiarities and practical importance of the conjugata vera and the conjugata diagonalis. In the newest edition of his *Textbook of Obstetrics* H. Martius also added this special pelvic type to the list of abnormalities of the bony pelvis, thereby introducing it into the field of clinical instruction.

In what percentage of cases does one encounter a long pelvis? This question can be answered only indirectly and with great reservation. It may be assumed that, taking all pathologic types of pelvis together, the percentage of the long pelvis is about 40 per cent and therefore equal to the incidence of the rachitic pelvis.

With respect to the genesis of the long pelvis, the results of orienting studies on postnatal pelvic development implied that this type of pelvis is caused by a general, apparently hormonally conditioned, arrest of development. The observation that a great percentage of the patients suffer from an ovarian insufficiency speaks in favor of this explanation. Examinations of relatives made it certain that hereditary factors also play a certain part in producing variations in the different segments of the vertebral column.

There is no doubt that the long pelvis, as a variety of the assimilation pelvis, has a special importance. Knowledge of this type of pelvis with its different trouble points and with the serious complications arising therefrom, should be a part of every obstetrician's training. It represents a recent theoretic achievement of practical importance.

SUMMARY

In addition to the hitherto well-known anomalies of structure of the bony pelvis there is the "Assimilationsbecken," which has some practical importance. This is called by the author "long pelvis." It can cause serious complications, which knowledge of its nature and existence enables one to foresee and prevent. The anomaly is not uncommon and is best diagnosed by means of lateral roentgenogram.

RIASSUNTO

Accanto alle già note anomalie del bacino osseo, anche al "bacino di assimilazione" di Kirchhoff, detto anche "bacino lungo," spetta un'importanza praticamente notevole. Molteplici fenomeni di disturbo possono causare gravi complicazioni, che però sono evitabili ove si conosca questa forma di bacino che si presenta tutt'altro che raramente. La diagnosi è finora possibile solo attraverso i raggi, per mezzo di una radiografia laterale.

ZUSAMMENFASSUNG

Neben den bisher bekannten Bauanomalien des knöchernen Beckens kommt dem Assimilationsbecken, von Kirchhoff auch als "Langes Becken" bezeichnet, eine praktisch wichtige Bedeutung zu. Mehrfache Störungsmomente können schwerwiegende Komplikationen bedingen, die aber bei Kenntnis dieser keineswegs selten auftretenden Beckenform vermeidbar sind. Die Diagnose ist bisher nur röntgenologisch durch eine seitliche Aufnahme zu stellen.

RÉSUMÉ

Apart des anomalies de la structure pelvienne déjà connues le bassin d'assimilation, désigné "Langes Becken" (bassin long) par Kirchhoff, est d'importance practique. Cette formation du bassin que n'est pas rare du tout, peut causer des troubles nombreux et des complications sérieux, qu'ou peut eviter, si elle est connue. Jusqu'à présent la diagnose est seulement possible radiologiquement par une radiographie latérale.

SUMARIO

Em adiccão às anomalias de estructura da pelvis ossea, até aqui bem conhecida, existe a chamada "assimilacao pelvica," a qual tem alguma importancia practica. Esta è denominada pelo autor "long pelvis" ou pelvis longa. Esta anomalia póde causar sèrias complicacoès, mas o conhecimento de sua natureza e existencia habilita o ginecologista e obstetra a prevêlas e preveni-las. Esta anomalia não è rara e è melhor diagnosticada por meio de roentgenogramas lateraes.

RESUMEN

Además de las ya bien conocidas anomalías de estructura de la pelvis ósea, existe la "pelvis de asimilación," que tiene alguna importancia práctica. Esta es llamada "pelvis larga" por el autor. Puede causar serias complicaciones que pueden ser previstas y evitadas por el ginecólogo y el obstetra que tengan conocimiento de su existencia y naturaleza. Esta anomalía no es rara y se diagnostica mejor por medio de radiografías laterales.

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What sculpture is to a block of marble, education is to the soul.
—*Addison*

Education is an ornament in prosperity and a refuge in adversity.
—*Aristotle*

Education makes people easy to lead, but difficult to drive; easy to govern, but impossible to enslave.
—*Lord Brougham*

The secret of education lies in respecting the pupil.
—*Emerson*

Ophthalmologic Surgery

Hypotony Following an Intraocular Surgical Procedure

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HYPOTONY is a rather consistent occurrence after intraocular surgical operations, especially those performed for cataract or glaucoma. In most instances hypotony is not a cause for alarm, as normal intraocular pressure eventually is reestablished with no permanent visual loss. Complications do result in a small percentage of cases, especially when hypotony is accompanied by prolonged flattening of the anterior chamber. The hypotony resulting from loss of vitreous is not included in this article.

The frequency with which hypotony follows the extraction of cataract has been amply demonstrated by Hilding,[1] who observed it so regularly after the twelfth day that its occurrence is now considered the rule rather than the exception. I agree with Hilding[1] that this sequence of events is frequent, whether there is a flattened anterior chamber or not. The same holds true following operations for intraocular glaucoma. Postoperative checks of intraocular pressure show that hypotony frequently lasts for three or four weeks. In the absence of prolonged flattening of the anterior chamber, the intraocular pressure will return to normal limits without any permanent damage to the eye.

Hilding[1] postulated that the trauma, accompanied by edema or hemorrhage or both, that is incidental to the extraction of a cataract causes a disturbance of the electrical potentials between the stroma and the epithelium. As a result, there is interference with the production of aqueous, and the rate of outflow of aqueous is reduced, owing to general congestion. Bellows and his co-workers[2] suggested that a pronounced diminution of the flow of aqueous may be an important cause of prolonged flattening of the anterior chamber. They expressed the opinion that, because of the pressure gradient between the posterior and the anterior chamber, a transient lack of the aqueous causes the vitreous to be drawn firmly against the iris, thus obstructing the free passage of aqeuous from the posterior into the anterior chamber. As the aqueous is thus prevented from entering the anterior chamber, the pressure gradient increases. This places the hyaloid membrane and the vitreous still more firmly against the iris until complete obstruction occurs. With this pupillary block, the back pressure in the posterior segment interferes with uveal circulation, which in turn results in diminished aqueous formation.

I agree with Hilding[1] and Bellows[2] that diminished formation of aqueous is a cause of postoperative hypotony. In some instances, perhaps, both theories of postoperative hypotony are at least partially

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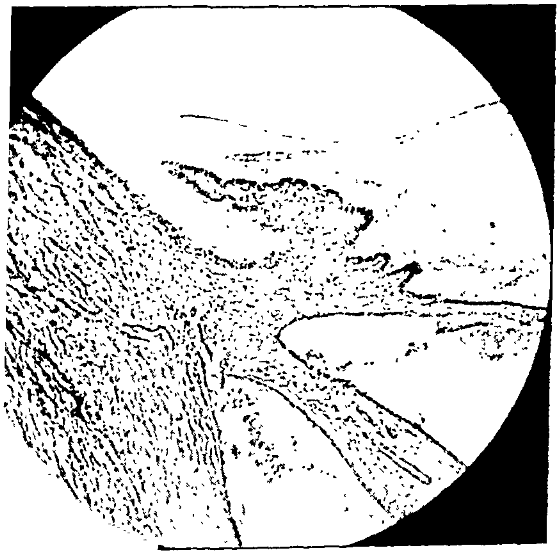
icable. Hypotony following an opera- for cataract is much less frequent n the wounds are adequately sutured ı when they are not. Two corneoscleral res should not be considered adequate. early leak, even though its outlet closes itaneously, would precipitate the train vents aforedescribed.

linical and pathologic observations of with postoperative hypotony suggest the diminished formation of aqueous prime cause of the hypotony. A con- it finding in eyes soon after intraocular gical operations is edema of all of the aocular tissues, as well as widespread iorrhages. Contrary to the report of aporta,[3] papilledema, which is discern- ophthalmoscopically, is observed not equently in eyes with hypotony follow- surgical operations for both cataract glaucoma. On several occasions I have ı peripapillary retinal hemorrhages r extraction of cataract, which is con- y to Dellaporta's report that they do occur. In 1 instance considerable illedema, accompanied by hemorrhages, noted on completion of extraction of iract.



. 1.—Hypotony of twenty-four hours' dura- ı. Rabbit eye shows hemorrhage in base of ciliary body opposite wound.

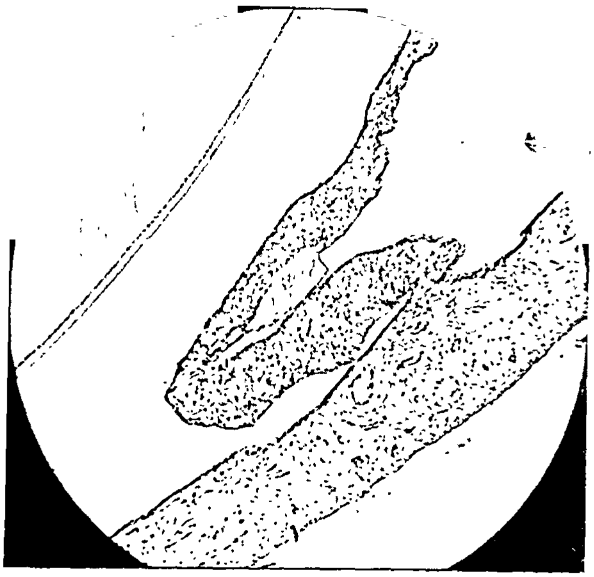


Fig. 2.—Hypotony of ninety-six hours' duration. Rabbit eye shows congestion and edema of ciliary body.

Kirby[4] stated that he has frequently seen macular edema after operations for glaucoma, and that he considers it likely to follow any opening of the eye.

Figures 1 and 2 are of rabbits' eyes in which the corneas were trephined, without disturbance of the irides, to produce hypotony. Trauma was avoided as much as possible in order to minimize the effect of trauma on the intraocular structures. All sections show edema. Figures 1 and 2 demonstrate hemorrhages, and Figures 3 and 4 demonstrate congestion of the intraocular tissues. In my opinion the hemorrhages, edema and congestion of the intraocular tissues are primarily due to the sudden lowering of intraocular pressure. Normally the intraocular (vascular) pressure is adjusted to an intraocular pressure that is relatively constant and not too much lower than the intravascular pressure. The sudden loss of the intraocular pressure would upset this delicate balance, causing transudation of fluid, congestion and hemorrhages. The choroidal detachment observed so frequently in eyes with postoperative hypotony is probably due to

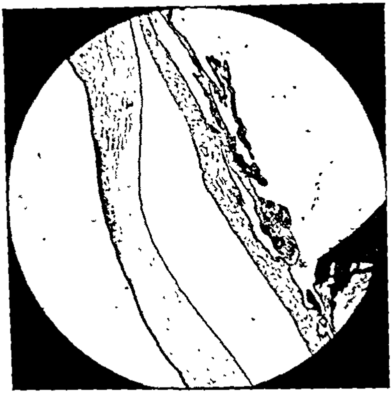


Fig. 3.—Hypotony of forty-eight hours' duration. Rabbit eye shows congestion and edema of ciliary body.

this transudation of fluid.

Heath[5] listed many pathologic changes that occur in eyes with hypotony. The symptoms of hypotony following an intraocular surgical procedure are primarily those of irritation. Lacrimation is frequent. The eyeball is injected, and this condition often is accompanied by edema of the eyelids. The corrected vision is always subnormal. The disappointing vision one occasionally obtains three to five weeks after extraction of a cataract may well be attributed to the fact that the intraocular pressure is still subnormal.

The flattening of the anterior chamber sometimes associated with hypotony may become a serious matter if allowed to persist too long. Kronfeld[6] noted that absence or near-absence of the anterior chamber occurred in 11 per cent of 749 cases of extraction of uncomplicated cataract. He concluded that delayed or disturbed healing of the operative wound is the principal cause of delayed restoration of the chamber.

Chandler[7] strongly emphasized the importance of a tight closure of the wound with scleral sutures when doing a peripheral iridectomy for narrow-angle glaucoma. Barkan[8] described a method of peripheral iridectomy for narrow angle glaucoma that insures retention of the chamber and prevents later leakage from the wound. In Barkan's technic,[8] not only is the possibility of synechia at the angle minimized because the anterior chamber is retained but hypotony, with its potential ill effects, is prevented. Hypotony in cases of narrow-angle (closed angle) glaucoma is especially undesirable, assuming that the resulting pathologic changes in the ciliary body and the iris cause diminution of aqueous formation. The result of this would be prolonged flattening of the anterior chamber with further adhesions at the angle. In my own opinion, the lack of aqueous formation rather than a leaking wound only is the cause of prolonged flattening of the anterior chamber after an iridectomy for narrow-angle glaucoma, or that at least it is aggravated by this lack.

What is the cause of flattening of the anterior chamber after extraction of cataract? The eyes are soft, but the pressure in most eyes is subnormal for many days

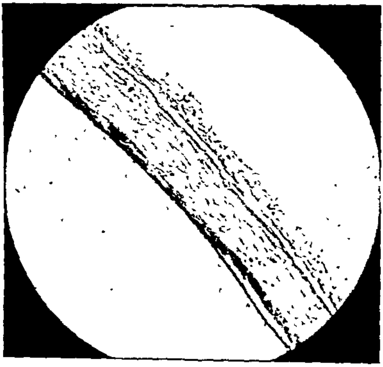


Fig. 4.—Hypotony of twenty-four hours' duration. Rabbit eye shows congestion of choroid.

after a cataract has been extracted. In an eye with a leaking wound, one might expect the iris and the anterior face of the vitreous to move forward, as the pressure gradient would be the least anterior at the site of the leak. Not all eyes with leaking wounds, however, have flattened anterior chambers. In many patients a leaking wound cannot be demonstrated, even though a flattened anterior chamber is present. The condition of the anterior face of the vitreous may be the answer, at least in some instances. If the hyaloid membrane were intact, the iris and the anterior face of the vitreous could come forward together, and a flattened anterior chamber would result. If the hyaloid membrane were not intact, the vitreous could easily herniate through the pupil, equalizing the pressure in the anterior and posterior chambers and retaining the anterior chamber. As was ably pointed out by Chandler and Johnson,[9] flattening of the anterior chamber due to pupillary block can undoubtedly occur.

Correction of hypotony following an intraocular surgical procedure is confined almost exclusively to eyes with flattened anterior chambers. Adequate suturing of the wound is the best preventive measure. Three or more corneoscleral sutures should be used in cataract extraction. Postoperative injection of air is useful in determining whether the suturing of the wound is adequate. Additional sutures should be placed if air is not readily retained in the anterior chamber. Immediately after a cataract operation, the intraocular pressure is zero. Injection of air at this time would raise the pressure to some extent. This would allow a more rapid return to normal fluid balance within the eye. If a leak is suspected but cannot be definitely located, suturing a Kuhnt (Van Lint) conjunctival flap over the upper half of the cornea is effective. It is advisable to cauterize lightly or to freshen the wound before bringing the flap down. If the anterior chamber is flattened, air should be injected at the conclusion of the repair.

A significant number of eyes with flattened anterior chambers will respond to a maximum dilation with 10 per cent solution of Phenyleprine (neosynepherine hydrochloride), followed by maximum miosis with 0.1 isoflurophate (Floropryl) in eyes with pupillary block. This treatment has the theoretic advantage of preventing and possibly breaking anterior synechie. In many eyes with flattened anterior chambers, however, the reaction of the iris is minimal after the use of either mydriatics or miotics.

Injection of air into the anterior chamber is usually effective in correcting a flattened anterior chamber after extraction of cataract. Kronfeld[6] suggested that the beneficial effect of the injection of air may be attributed to the fact that the air completely or partially blocks a leaking wound. This blockage of a leaking wound by air is possible, but the injection of air is certainly beneficial to most eyes with flattened anterior chambers without a demonstrable leaking wound or after a leaking wound obviously has been repaired adequately. Restoration of the intraocular pressure by the injection of air may occur, allowing the structure having to do with aqueous formation to function under more nearly normal conditions. In my experience, release of the suprachoroidal fluid (posterior sclerectomy), in addition to an injection of air into the anterior chamber, has seldom seemed necessary.

Pupillary block should be kept in mind where there is a shallow anterior chamber in a moderately inflamed eye after a round pupil cataract extraction. A posterior synechia is responsible for the pupillary block. The intraocular pressure is usually normal or above normal in spite of a shallow anterior chamber. An anterior synechia forms very quickly and will always result in secondary glaucoma unless the condition is recognized and corrected. A small needle knife opening through the iris is sufficient.

The use of Diamox in flattened anterior chambers, as recommended by Agarwal and his associates[10] has not been effective, but I have not tried this method of treatment in many cases.

In cases of flattened anterior chambers, Armstrong[11] has recommended a few drops of plasma over the incision, and the addition of 1 or 2 drops of "Thrombin, Topical" solution (1,000 units per milliliter). The eye is left open for one to two minutes to allow the clot to become firm; the upper lid then is lifted gently over it and left undisturbed for twenty-four hours.

SUMMARY

Hypotony of several days' to several weeks' duration following an intraocular surgical procedure is a consistent occurrence. The hypotony, in most instances, will disappear spontaneously without permanent damage unless there are complicating factors, such as a flattened anterior chamber.

Apparently the sudden loss of intraocular pressure that occurs with the opening of an eyeball causes transudation of fluid, congestion and hemorrhages. This occurs because the intravascular pressure within the eye remains normal as the intraocular pressure drops to zero.

The diminution of aqueous formation is a major cause of postoperative hypotony and is due for the most part to the edema, congestion and hemorrhages that occur within the ciliary body and the iris. A major factor in prolonged flattening of the anterior chamber is probably the result of this diminution of aqueous formation. This applies especially when a demonstrable leak cannot be demonstrated or when no pupillary block is present.

RÉSUMÉ

Les opérations chirurgicales intra-ocularies sont fréquement suivies d'un état d'hypotonie de plusieurs jours à plusieurs semaines; celui-ci disparaîtra spontanément dans la plupart des cas sans laisser de lésion permanente, à moins de complications, tel—par exemple l'aplatissement de la chambre antérieure.

La baisse soudaine de la pression intraoculaire au moment de l'incision du globe oculaire, provoque apparemment une transsudation de liquide, ainsi que de la congestion et des hémorragies, dues au fait que la pression intravasculaire de l'oeil reste normale, alors que la pression intraoculaire tombe à O.

La diminution de la formation d'humeur aqueuse est une des principales cause d'hypotonie post-opératoire; elle est, en majeure partie, due à l'oedème, à la congestion et aux hémorragies se produisant à l'intérieur du corps ciliaire et de l'iris. Un des facteurs principaux de l'aplatissement prolongé de la chambre antérieure est probablement la conséquence de la diminution de la formation de liquide.

RIASSUNTO

Dopo gli interventi endooculari l'ipotonia è una eventualità pressochè costante per periodi di durata variabile. In molti casi scompare spontaneamente senza lasciare danni definitivi, a meno che non vi siano altre complicazioni come il collasso della camera anteriore.

La perdita improvvisa della pressione endooculare che sit verifica con l'apertura dell'occhio causa trasudamento di liquido, congestione ed emorragie. Questo avviene poichè la pressione intravasale rimane normale mentre quella intraoculare è caduta a zero.

La causa principale dell'ipotonia è rappresentata dalla diminuita formazione di acqueo ed è causata in gran parte dall'edema, dalla congestione e dalle emorragie che si determinano nel corpo ciliare e nell'iride. Un altro fattore importante dell'appiattimento della camera anteriore è il persistere nella diminuzione della produzione di umor acqueo. Questa vale quando non vi sia una perdita dimostrabile o quando non vi sia un blocco pupillare.

RESUMEN

La hipotomía de varios días ó varias semanas de duración después de una operación intraocular es de incidencia frecuente. La hipotonía, en la mayor parte de casos, desaparece aspontaneamente sin dejar secuelas, salvo que hayan complicaciones, tales como aplanamiento de la cámara anterior.

Aparentemente la pérdida súbita de la presión intraocular que ocurre con la abertura del globo ocular, causa transudación de líquido, congestión y hemorragias. Esto sucede porque la presión intravascular dentro del ojo sigue normal mientras la presión intraocular cae a cero.

La disminución de formación acuosa es una causa mayor de hipotonía postoperatoria y se debe principalmente al edema, congestión y hemorragia que ocurren dentro del cuerpo ciliar y el iris. Un factor mayor en el aplanamiento Omadero de la cámara anterior, es probablemente el resultado de la disminución de formación de acuosa. Esto es cierto especialmente cuando no se puede demostrar una salida ó cuando no hay bloque pupilar.

SUMARIO

A hipotonia que se segue os métodos cirúrgicos intra-oculares, por varios dias ou semanas, é uma acontecimento constante. Essa situação desaparece expontaneamente, em muitos casos, sem deixar sequelas, a menos que existam complicações tais como achatamento da camara anterior.

A perda súbita de pressão intra-ocular que ocorre com a abertura do globo ocular causa transsudação de líquido, congestão e hemorragia. Isto acontece porque a pressão intra-vascular dentro do ôlho permanece normal emquanto a a pressão intraocular cai à zero.

A diminuição da formação aquósa é a maior causa de hipotonia pós-operatória e é devida, em grande parte ao edema, congestão e hemorragia que ocorrem den tro do corpo ciliar e da íris. O fator mais importante no achatamento prolongado da camara anterior é, provavelmente, o resultado da diminuição da formação aquósa. Isto acontece quando não pode ser evidenciada uma perda líquida ou quando há ausência de bloqueio papilar.

ZUSAMMENFASSUNG

Das Auftreten eines intraokulären Unterdrucks, der mehrere Tage bis mehrere Wochen nach einem chirurgischen Eingriff innerhalb des Auges dauern kann, gehört zu den ständigen Vorkommnissen. In den meisten Fällen verschwindet der Unterdruck von selbst, ohne eine dauernde Schädigung zu hinterlassen, es sei denn dass komplizierende Umstände wie eine abgeflachte vordere Kammer vorliegen.

Offenbar verursacht der während der Eröffnung des Augapfels plötzlich eintretende Verlust des intraokulären Druckes eine Transsudation von Flüssigkeit, Stauung und Blutungen. Das ist darauf zurückzuführen, dass der Druck innerhalb der Gefässe im Augapfel normal bleibt, während der intraokulare Druck auf den Nullpumkt absinkt.

Die Verminderung der Augenwasserbildung ist eine wesentliche Ursache des postoperativen Sinkens des intraokulären

Druckes und beruht grösstenteils auf dem Ödem, der Stauung und den Blutungen, die im Ziliarkörper und in der Iris entstehen. Das Resultat dieser Verminderung der Wasserbildung spielt wahrscheinlich *eine erhebliche Rolle zur Entstehung einer* anhaltenden Abflachung der vorderen Kammer. Dies trifft besonders dann zu, wenn sich ein Riss nicht nachweisen lässt oder keine Blockierung der Pupille besteht.

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Let him who is capable of thinking for himself and of conceiving noble thoughts adopt, if he can, the manner and the stateliness of the great masters. All the riches of expression belong by right to those who know where to bestow them.

Nor should we fear to repeat an old truth when we are able to give it more force by a better way of saying it, or to link it to another truth that will illuminate it, and so construct a whole body of argument. It is the characteristic of inventive wits that they grasp the connection between things and know how to bring them together; and old discoveries belong less to their first authors than to those who make them useful.

—*Vauvenargues*

Fibrosarcoma Following Single Trauma

Report of a Case

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THIS report of yet another case in which a malignant tumor appeared at the site of an earlier injury can be justified only because the entire subject has been one of voluminous discussion and marked disagreement.

REPORT OF CASE

A white man aged 24 struck his left hand on a guard rail at work on April 24, 1954, while loosening a nut wrench. The injury was moderately severe, occurring over the dorsum of the hand between the first and second metacarpals. It caused soreness "like a bone bruise," which lasted a few days and was followed in about ten days by numbness of the thumb, index and middle fingers and "a tight feeling" over the palmar aspect of the third metacarpal. The patient then went to a physician (May 13, 1954). A diagnosis of injury of the left median nerve was made, and hot soaks and protection of the hand were advised. On August 23, 1954, after several visits, it was noted that the patient had little difficulty, although tingling could be produced by percussion over the median nerve, and no motor weakness or sensory low could be demonstrated. The patient was in a new job; he did not have to use his hand for heavy work and failed to keep subsequent appointments. On June 9, 1955, however, I examined this patient because what had been a "pinching, burning sensation" over the radial and volar aspects of the middle finger, the volar aspect of the index finger, and the volar ulnar aspect of the thumb had increased in the past few days; it included the entire thumb and its severity had increased. On gripping hard, he had noticed "shooting, burning" pain over the lateral thenar eminence for the past few days, and, whereas varying the hand's position had formerly afforded relief, this was no longer the case.

The past history included no known exposure to a carcinogen. On physical examination, a point of moderate tenderness was noted over the proximal end of the proximal palmar crease at the distal end of the transverse carpal ligament, with considerable radiation of pain to the radial aspects of the thumb and middle finger. All motions of fingers and thumb were intact, and there was no atrophy or abnormality of color, pulse or temperature. Sensation to pinprick revealed minimal decrease over the volar aspect of the index finger, but marked decrease over the volar aspect of the thumb, the radial aspect of the volar aspect of the middle finger and the dorsum of the distal two phalanges of the middle finger. Grip, although noticeably weakened, caused pain along the radial aspect of the thenar eminence and the thumb. Although a pea-sized, painless ill-defined nodule was palpated over the juncture of the proximal and middle thirds of the proximal palmar crease, this could not be detected on subsequent examinations. The impression was that of a carpal compression syndrome,[30, 40] and on July 25 the transverse carpal ligament was exposed and divided. Structures beneath the ligament seemed normal. On October 10 the patient was seen in consultation with two other orthopedists. He complained of a "tight feeling" in the knuckles and a "pinching feeling" in the middle finger and, to a lesser extent, in the index. He had returned to work a week after his operation. The palm had been less tender, but the thumb,

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index and middle fingers still tingled when struck. The nodule, which had been extremely tender prior to the operation, had "disappeared." Positional changes that caused cramping in the hand, noticed before the operation, had also disappeared. The tips of the thumb, index and middle fingers were still sensitive; there was an occasional "drawing" in the wrist, but the "burning" in the fingers had improved to a pronounced degree. The patient considered himself improved. On physical examination, the significant signs were hypesthesia over the proximal volar portions of the index and ring fingers and hypesthesia distal to this, with normal sensation over the thenar eminence, but hypesthesia over the midvolar surfaces of the phalanges of the thumb. The scar was well healed, nonadherent and just ulnarwards to the thenar crease, extending distally to the midpalm. Some increased weakness in the grip of the left hand was noted, and there was some dryness of the index and middle fingers. No abnormal masses were palpated.

A month after this consultation an ill-defined, pea-sized nodule was observed over the midportion of the scar, and this was judged to be induration about the scar. Pain and tenderness recurred along sensory branches of the median nerve, frequently during the day, and sensory loss in the tips of the thumb, index and middle fingers had become pronounced. A month later the small nodule had become considerably larger and was now present over the distal half of the surgical scar. It was 1½ inches (3.7 cm.) in diameter, not adherent, not moving with finger motions, not pulsating or fluctuating and not extremely tender except on extremely deep pressure. Roentgenograms revealed a large soft tissue mass with a trace of calcification.

On December 28 exploration revealed a moderately firm, brownish-red mass about 3 cm. in diameter, deep to the palmar fascia overlying the adductor of the thumb and the first lumbrical, and apparently incompletely encapsulated. A portion was subcutaneous, distal to the palmar fascia, volar to the first lumbrical tendon and the second metacarpal head. Pathologic examination revealed fibrosarcoma arising in the soft tissues of the hand and revealing many mitoses, anosocytosis, with variations in staining properties, and many areas showing abnormal, rounded nuclei.

On December 30 amputation was performed through the midpart of the left arm. Dissection of the specimen revealed that the neoplasm had not extended to within 1.5 cm. of the transverse carpal ligament and that the epitrochlear nodes were not involved. Up to the time of writing no metastasis has occurred.

Clinical Evidence.—About 5,000 years ago a mammary tumor was reported[1] as possibly due to trauma. Controversy has been voluminous since on the possible relation of trauma to new growth. Maude Slye[2] reported on the frequent occurrence of sarcomas at the sites of wounds in mice (later denied by Curtis[3]). The increased incidence of sarcoma occurring in "war injuries," in which considerable mechanical damage, infection, suppuration and splinters had exerted an effect over a long period, was conceded by Hellner,[4] who denied that single trauma could cause osteogenic sarcoma. Gillis and Lee[5] had described 24 cases of carcinoma arising in sinuses and scars in World War II wounds, whereas Melzner[6] reported on infrequent sarcoma following World War I wounds, and Hamant[7] reported likewise. Von Hansemann,[8] Gruber,[9] and Pick[10] noted no increase in tumor formation following these wounds. Stout[11] reported that in 36 of 66 cases of fibrosarcoma of the extremities the tumor developed in a scar.

Whereas Hellner[4] denied the possibility that a single trauma could cause giant bone cell tumor or osteogenic sarcoma, Inclan[12] reported in detail 3 cases of giant cell tumors of the knee following falls and knee injuries after several months, and Pack and Braund[13] described 3 cases of osteogenic sarcoma developing in traumatic hemothorax and hematoma of the thoracic wall.

Earlier reports (e.g., Lowenstein[14]) indicated that from 5 to 16 per cent of patients with sarcoma had a history of single trauma, but the evaluation of the history was usually inadequate. To add to the difficulties in evaluating this problem, after Meyerding[15] noted a relation between trauma and the development of fibrosar-

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Otorhinolaryngologic Surgery

Mobilization of the Stapes for Improvement of Defects in Hearing Due to Clinical Otosclerosis

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MOBILIZATION of the stapes practiced during the late nineteenth century,[1] discarded and recently revived,[2] is a subject of considerable interest to the medical profession as well as to some millions of those whose hearing loss is potentially reversible. It is, in addition to the fenestration operation, a possible therapeutic tool for the improvement of hearing in those whose loss is consistent with the diagnosis of clinical otosclerosis.[3]

Otosclerosis commonly causes varying degrees of stapedial ankylosis. Impairment in the mobility of this essential link in the ossicular chain results in a mechanical defect of the hearing system, which may be recognized audiometrically as tympanic deafness, or deafness of the middle ear (Fig. 1).

In tympanic impairment of hearing the bone conduction (BC) thresholds according to pure tone audiometric tests are normal or variably increased, depending upon the degree of neural degeneration. The air conduction (AC) thresholds are elevated to a level proportional to the degree of stapedial fixation, but not exceeding 50 to 60 decibels without some loss of bone conduction acuity. When the maximum loss in air conduction acuity is reached the stapes is generally considered to be firmly fixed, at least so far as sound pressure excitation is concerned. However, when the air-borne conduction thresholds do not differ by more than 30 decibels, the stapes may be only partially fixed (Fig. 2). The difference between the air conduction and the bone conduction thresholds is referred to as the cochlear reserve (CR) and indicates the potential of improvement in hearing, were the mechanical defect of stapes fixation to be corrected. In addition, the bone conduction threshold indicates the degree of normal hearing to be restored if the stapes can be completely mobilized. Thus, by mobilization of the stapes, it is possible to improve hearing to levels equal to the neural function or the bone-conduction thresholds (Fig. 3, *A* and *B*). In some instances this represents nearly normal hearing (Fig. 4, *A* and *B*).

Selection.—It is apparent that at least three categories of clinical otosclerosis are suitable for treatment by mobilization of the stapes. The first is classified on the basis of normal bone conduction thresholds for pure tone audiometry (bone conduction at 2,000 cycles not lower than 20 db.).

1. Normal bone conduction; cochlear reserve 25 db. or more (Fig. 5, *A* and *B*)
2. Bone conduction loss less than 30 db.; cochlear reserve 25 db. or more (Fig. 6, *A* and *B*)
3. Bone conduction loss greater than 30 db.; cochlear reserve 30 db. or more (Fig. 7, *A* and *B*)

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Criteria for selection are dependent upon the presence, in the results of hearing tests, of:

1. Ample air-bone conduction gap or cochlear reserve at frequencies 500, 1,000 and 2,000 cycles per second to permit an appreciable improvement. The magnitude of this gap should be at least 20 to 25 decibels.
2. Elevation of the bone conduction threshold at 500, 1,000, 2,000 cycles per second not greater than 30 db. Otherwise serviceable hearing for conversation would not be possible without a hearing aid.
3. Average elevation of the bone conduction threshold at 500, 1,000 and 2,000 cycles per second greater than 30 db., with a cochlear reserve of at least 30 db. Although serviceable hearing is not possible without a hearing aid, elimination of the mechanical defect (stapes fixation) may permit an improvement of hearing with a hearing aid.

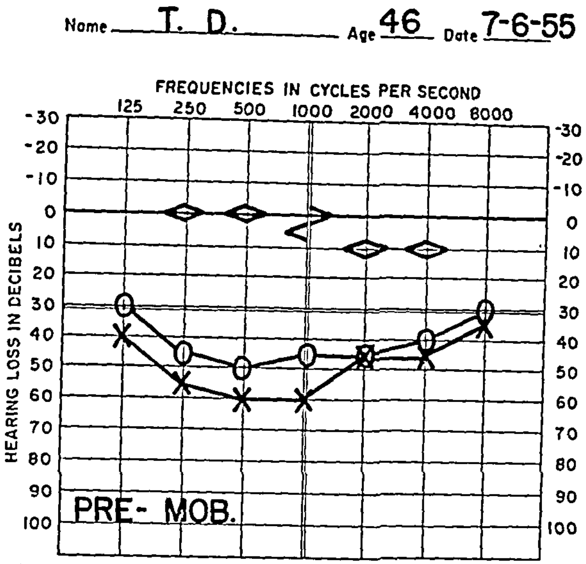

Fig. 1.—Audiogram indicative of tympanic deafness (see text).

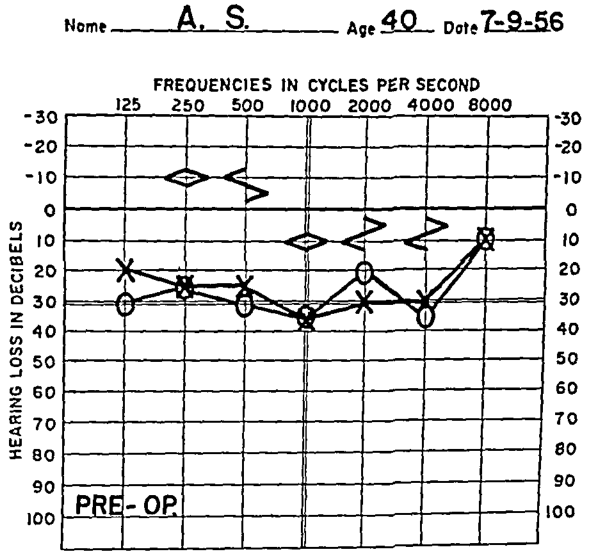

Fig. 2.—Audiogram indicating partial fixation of stapes (see text).

The history of efforts to mobilize the stapes reveals failure in most instances to improve hearing or to maintain it once improvement had been achieved. In 1900, after a considerable number of such operations, Siebenmann declared that mobilization of the stapes was a useless procedure in the treatment of impaired hearing.[4] Fifty-two years later Rosen,[5] using the peritympanic approach of Lempert[6] to the middle ear, reported that, while testing for stapes fixation to determine a patient's suitability for fenestration, he had inadvertently brought about hearing improvement. This experience was followed by further reports declaring the success of the mobilization operation for treating impaired hearing due to clinical otosclerosis.[7] Since then a number of otologists throughout the world have taken up the search for data in order to reevaluate the operation's appropriate application.

Surgical Technic and Management.—Technics may vary according to individual temperaments and personal preferences, but in principle they are much the same.

Patients accepted for surgical treatment are hospitalized for a total period of six to eight hours. Diet preferences are not interrupted, and no preoperative medication,

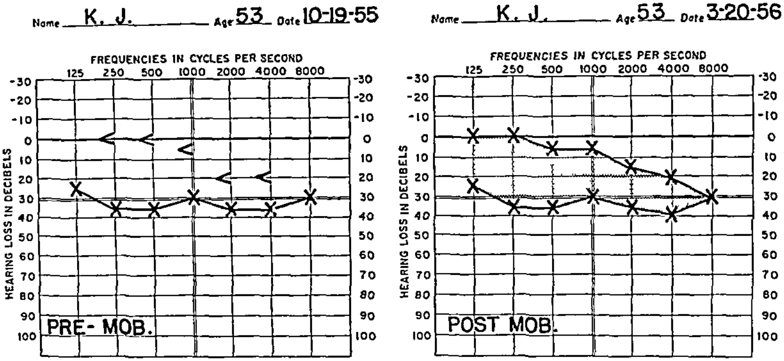

Fig. 3.—A, mobilization of stapes of left ear, Oct. 20, 1955. B, most recent audiogram, showing magnitude of sustained improvement.

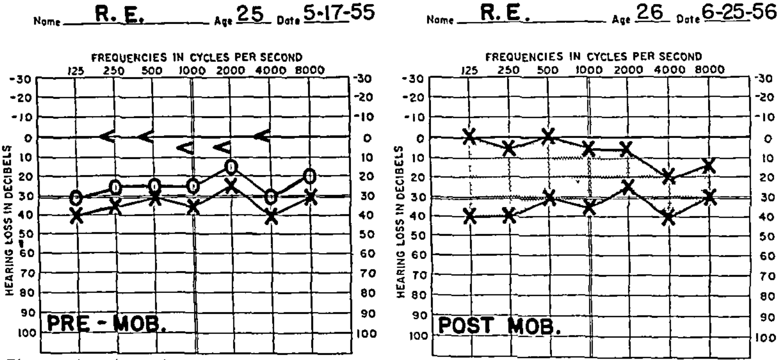

Fig. 4.—*A*, mobilization of stapes of left ear, April 18, 1955. *B*, most recent audiogram, showing magnitude of sustained improvement.

except a protective antibiotic, is prescribed.

Anesthesia is obtained by undermining the cutaneous external auditory canal with 0.2 to 0.4 cc. of 4:1 combination of 2 per cent zylocaine and 1:1,000 epinephrine introduced with a 0.5 cc. tuberculin syringe and a 26-gauge short beveled hypodermic needle. One injection is made at the posteroinferior junction of the cartilaginous and osseous portions of the external auditory canal, in the tympanomastoid suture. Thus the entire posterior and inferoanterior canal wall and the adjacent portions of the tympanic membrane are completely anesthetized.

A peritympanic incision is made in the *posterosuperior canal wall, extending* from the 11 o'clock position to the 8 o'clock position in the right ear and from the 1

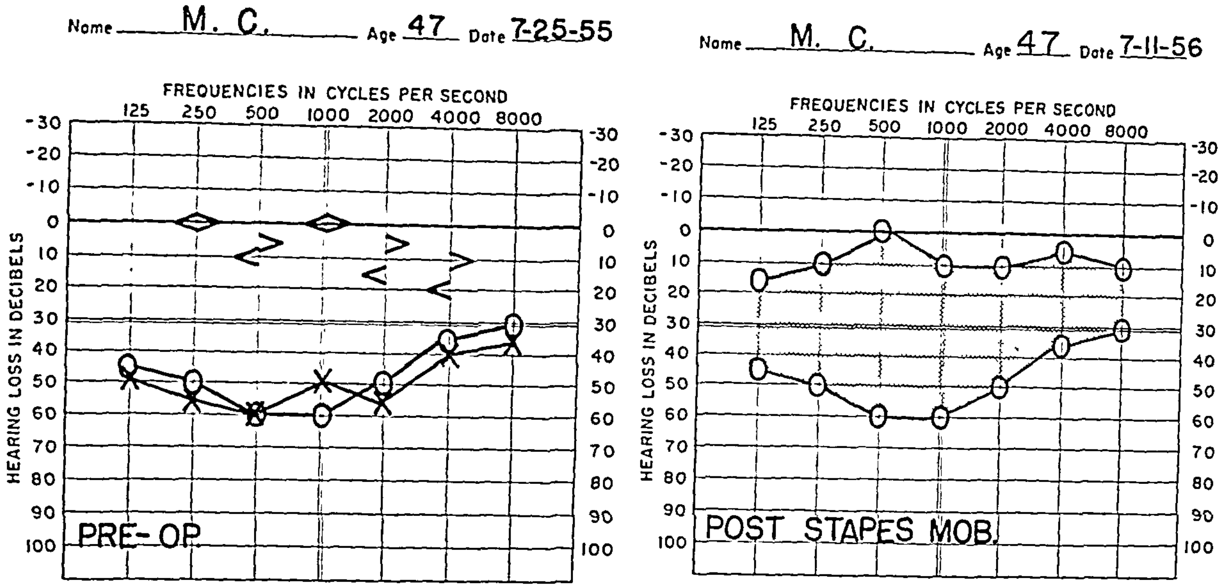

Fig. 5.—*A*, mobilization of stapes of right ear, July 26, 1955. *B*, most recent audiogram, showing magnitude of sustained improvement.

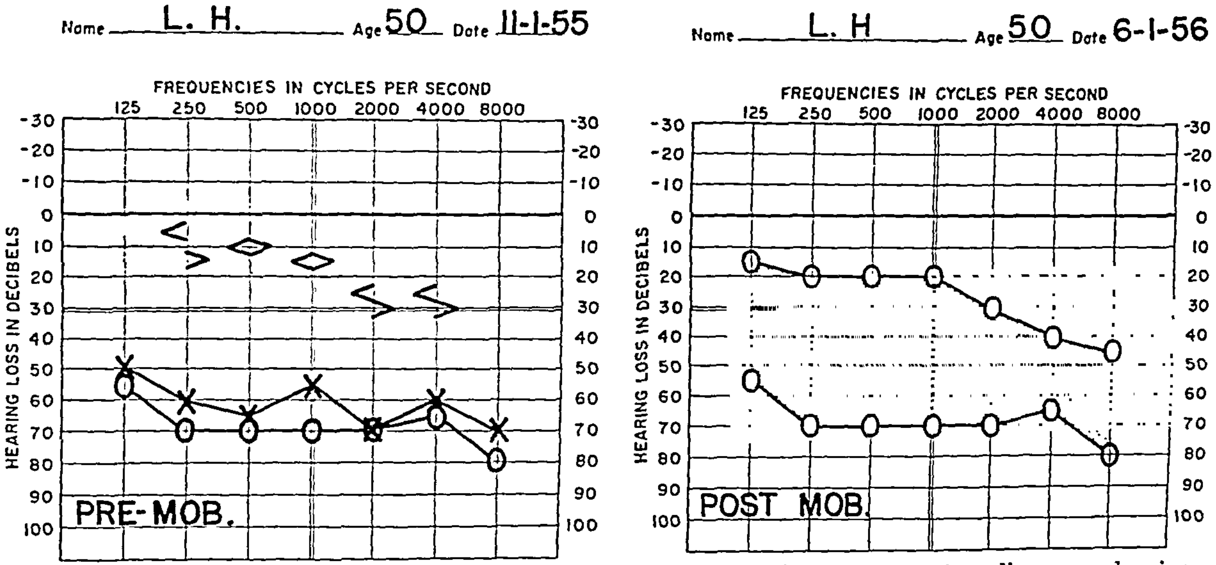

Fig. 6.—*A*, mobilization of stapes of right ear, Nov. 14, 1955. *B*, most recent audiogram, showing magnitude of sustained improvement.

o'clock position to the 4 o'clock position in the left ear and placed approximately 4 to 5 mm. external to the periphery of the tympanic annulus (Fig. 8*A*). The epithelial cuff is elevated toward the tympanic membrane until the annual ligament is encountered. At this point the operation is interrupted until complete hemostasis has been obtained. This is accomplished by placing, into the pocket formed by the incision, gelatin sponge mush comprised of shredded gelatin sponge mixed with topica thrombin.[7d] Immediately above the point of emergence of the chorda tympani nerve the annular ligament is engaged and elevated from its annual groove (Fig. 8*B*). This permits detachment of the posterosuperior quadrant of the tympanic mem-

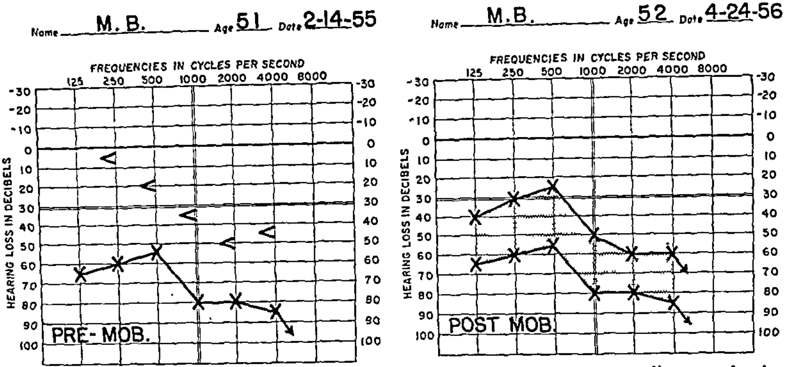

Fig. 7.—*A*, mobilization of stapes of left ear, Feb. 15, 1955. *B*, most recent audiogram, showing magnitude of sustained improvement.

brane, which is reflected anteriorly and inferiorly enough to expose the lenticular process of the incus, the lenticulocapitular joint, and the stapedial muscle tendon (Fig. 8*C*). Additional exposure may be obtained by lifting the chorda tympani from its annular bed and reflecting it anteroinferiorly. Occasionally it is necessary to remove about 1 mm. of osseous annulus to obtain adequate exposure. Thus the lenticulocapitular capsule is presented, through which a sharp-pointed shaft may be inserted to engage the head of the stapes. A to-and-fro force is then applied, first in a direction that crosses the long axis of the foot plate, then obliquely toward the long axis of the foot plate, until full freedom of motion can be exerted in the long axis of the foot plate and in all directions of stapedial mobility

Pure tone audiometric testing is employed in the operating room as a monitor of the successive degrees of improvement in hearing until maximum mobility of the stapes has been obtained. The circumstances that determine the degree of improvement are dependent on the firmness and extent of the otosclerotic process binding the stapes in the oval window. Should the entire foot plate be released from the otosclerotic process, excellent hearing improvement may result (Fig. 9, *A* and *B*). If only a segment of the foot plate is released, varying degrees of improvement may occur, depending upon the surface area disengaged.

Occasionally the crura are fractured, in which case leverage for continued efforts at mobilization by this technic is lost. There is great variation in the structure of the stapes among individual patients. In some the crura are exceedingly tenuous and the slightest pressure will cause a fracture. It has been shown that the most frequent site of fracture is at the juncture of the crura with the foot plate, where developmental osseous resorption is apt to be rather extensive. In the event of crural fracture, the foot plate still may be mobilized by the prying action of sharp picks[7c] or be fractured or pulverized with a miniature hammering device or a vibrator type of pulverizer. The latter procedures have not been encouragingly successful.

The operation is terminated by replac-

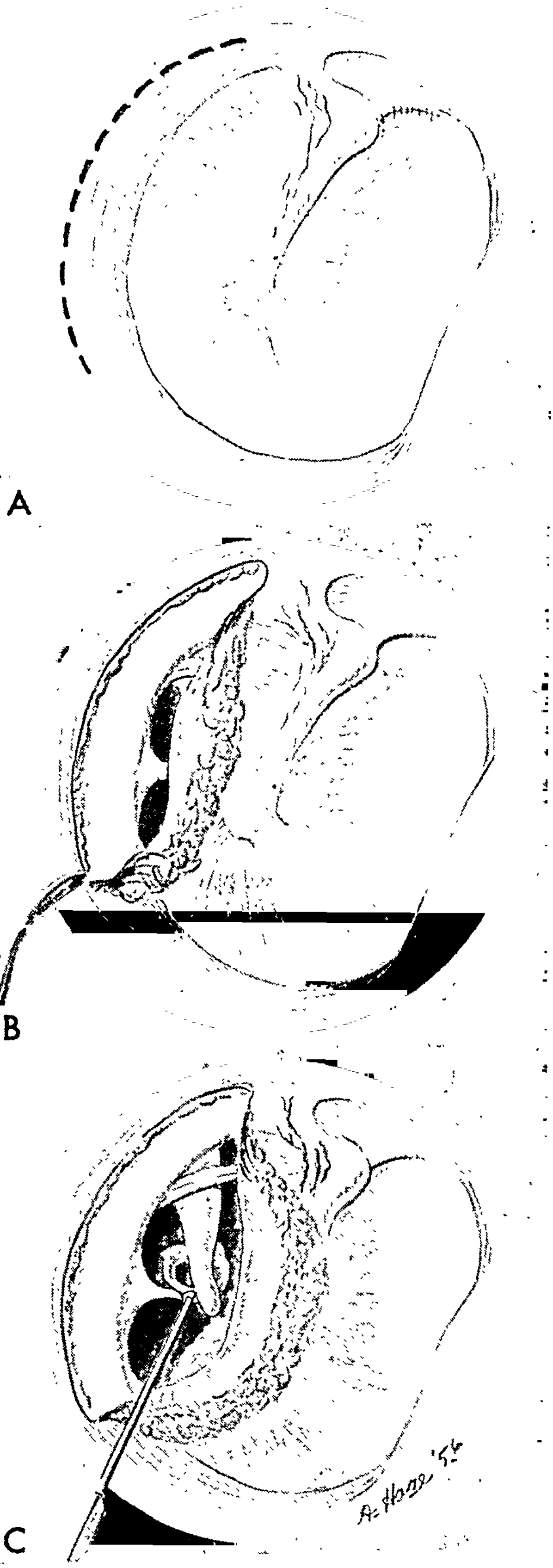

Fig. 8.—Operative technic.

ing the epithelial cuff in its original position and placing a strip of compressed gelatin sponge over the incision. Additional dressing is unnecessary, although some surgeons prefer to pack the canal with gauze strips or cotton pledgets. With rare exceptions, improvement in hearing occurs immediately. Occasionally it is delayed for three to four weeks.

After the operation the patient is transported to the audiology section, where postoperative hearing tests are made; then he is returned to his room and admonished to remain quiet until he is called for discharge. For two to four hours there may be earache, but this is controlled by analgesic agents administered before the patient becomes aware of pain, so that its anticipated intensity may be appreciably reduced.

Patients are discharged at about 4 o'clock of the same afternoon and instructed to return in four weeks. A prescription for an antibiotic is given to protect the site of incision for one week, and instructions are given to begin manual pneumomassage ten days after the operation. Upon the patient's return four weeks after the operation a small crust that will have formed over the incision has contracted and may be removed. The operative site is completely healed, and there is little evidence of surgical intervention.

Complications. — Complications rarely follow mobilization of the stapes. Hearing may become worse as a result of crural fracture, but the loss seldom exceeds 10 db. Damage to the inner ear is a possibility, but it has not occurred in the course of this study. Persistent vertigo does not occur. Injury to the facial nerve has been reported, but this is extremely rare. If the chorda tympani nerve is injured, complaint of perverted taste and dryness of the tongue may result. Temporary perforations of the tympanic membrane may occur but should not be of serious conse-

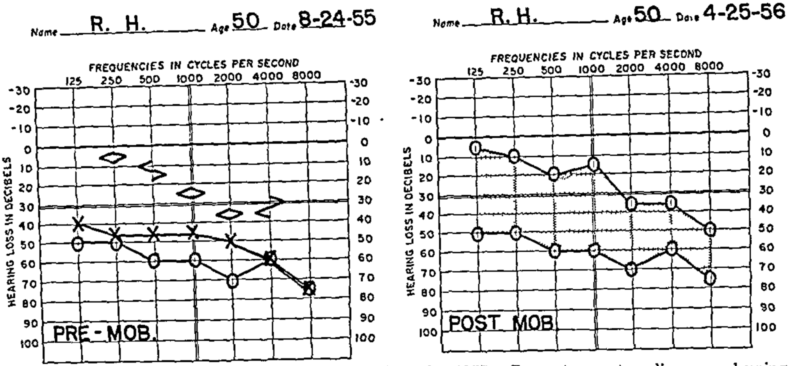

Fig. 9—*A*, mobilization of stapes of right ear, Aug. 25, 1955. *B*, most recent audiogram, showing magnitude of sustained improvement.

quence if ordinary technical caution is exercised. In the event of a perforation, a tissue paper diaphragm or a compressed gelatin pledget may be placed over the defect to seal the middle ear during the healing process.

It is possible that otitis media, with its varied complications, may result from mobilization of the stapes unless adequate antibiotic prophylaxis is prescribed. Despite this protective consideration, excessive surgical trauma may invite resistant infection, as it may after any surgical procedure.

On rare occasions the peritympanic incision may be the source of postoperative bleeding, but this is effectively controlled by firmly inserting a cotton pledget in the external auditory meatus to seal off the canal. Meddling with this annoyance is likely to result in contamination and an active infection.[8]

Results.—Four hundred stapes mobilizations were done in the eighteen months between October 1954 and April 1956. The results for the preoperative category one are shown in Table 1. The total number of ears treated in this group was 210. Hearing improved to the level of 30 db. or more in 94 ears (44.7 per cent). Subsequent regressions, most of them occurring within four weeks after the operation, were noted in 14 ears, leaving a net successful result for 80 ears or 38.1 per cent. Hearing in 63 instances (30 per cent) improved 15 db. or more but did not reach the 30 db. level. Eventual regressions withdrew 16 initial improvements; thus, 47 (22.4 per cent) sustained an improvement of 15 db. or more for six to eighteen months. Hence, total improvement was obtained in 127 (60.5 per cent); total regression in 30 (14.3 per cent), and no improvement in 53 (25.2 per cent).

In preoperative category 2 there were 171 operations (Table 2). Sixty of these, or 35.1 per cent, improved hearing to the 30 db. thresholds or better, but subsequent regressions subtracted 11 within four months after the operation, so that at the time of writing there are 49, or 28.7 per cent, with hearing improvement sustained for six to eighteen months. In 53 (31.0 per cent) appreciable improvement was achieved but did not reach the 30 db. level of practical and serviceable hearing. Fifteen of these eventually lost some of the improvement, but 38, or 22.2 per cent, have retained it.

Preoperative category 3 is comprised of only 19 ears, of which 8 (42.1 per cent) were initially improved 15 db. or more (Table 3). Subsequent regression, however, occurred in 6, leaving a net total of 2 (10.6 per cent) with some satisfaction.

Considering all preoperative categories, Table 4 shows an initial improvement sufficient to restore practical and serviceable hearing to 154 ears (38.5 per cent). Subsequent regressions occurred in 25 ears. Improvement has been sustained in 129 (32.3 per cent). Among the 124 ears (31 per cent) that regained hearing of 15 db. or more, there were 37 that relapsed: hence 87 (21.7 per cent) have retained their improvement.

In 216 (54 per cent) of the 400, sustained hearing improvements of appreciable magnitude have resulted from 400 mobilizations. There was a total of 62 (15.5 per cent) regressions; 122 (30.5 per cent) remained unchanged or unimproved, including 10 in which the hearing was made worse by 10 to 15 db.

COMMENT

It is obvious that mobilization of the stapes results in improvement of hearing, but the lasting effects of the procedure are still uncertain. Although the rate of improvement is satisfactory, regressions are discouragingly frequent. Even so, the 62 regressions noted in this study do not represent irreversible results. The stapes can be and has been remobilized at intervals of nine to twelve months, the results being increasingly sustained in some cases. In some instances this, coupled with self-applied manual pneumomassage, may delay the recurrence of stapedial ankylosis. The results of repeated operations have not been included in this report.

The question of why the operation was discarded many years ago remains puzzling, but the answer may well be related to the matter of sustained results. It is well known that otosclerosis develops and affects hearing, sometimes rapidly but more often so slowly that the patient becomes victimized without knowing pre-

TABLE 1.—*Normal Bone Conduction: Cochlear Reserve 25 Decibels or More (Two Hundred and Ten Cases)*

1.	Air conduction improved to 30 db. or more	N	94	44.7%			
	Subsequent regressions		14				
	Total				N	80	38.1%
2.	Air conduction improved 15 db. or more but not to 30 db. threshold	N	63	30.0%			
	Subsequent regressions		16				
	Total				N	47	22.4%
	Total improvements				N	127	60.5%
	Total regressions				N	30	14.3%
3.	No change				N	53	25.2%
	Total				N	210	100 %

TABLE 2.—*Bone Conduction Loss Less than 30 Decibels, Cochlear Reserve 25 Decibels or More (One Hundred and Seventy-One Cases)*

1.	Air conduction improved to 30 db. or more	N	60	35.1%			
	Subsequent regressions		11				
	Total				N	49	28.7%
2.	Air conduction improved 15 db. or more but not to 30 db. threshold	N	53	31.0%			
	Subsequent regressions		15				
	Total				N	38	22.2%
	Total improvements				N	87	50.9%
	Total regressions				N	26	15.2%
3.	No change				N	58	33.9%
	Total				N	171	100 %

TABLE 3.—*Bone Conduction Loss Above 30 Decibels, Cochlear Reserve 30 Decibels or More*

1.	Air conduction improved 15 db. or more	N	8	42.1%			
	Subsequent regressions		6				
	Total improvements				N	2	10.6%
	Total regressions				N	6	31.5%
2.	No change				N	11	57.9%
	Total				N	19	100 %

TABLE 4.—*All Preoperative Categories*

1.	Air conduction improved to 30 db. or more	N	154	38.5%		
	Subsequent regressions		25			
	Total				129	32.3%
2.	Air conduction improved 15 db. or more but not to 30 db. threshold	N	124	31.0%		
	Subsequent regressions		37			
	Total				87	21.7%
	Total improvements				216	54.0%
	Total regressions				62	15.5%
3.	No change				122	30.5%
	Total number of patients in study				400	100 %

cisely when. It is probable that what is considered sustained hearing improvement today will give evidence of insidious deterioration as the months or years go by, but if mobilization of the stapes continues to give good hearing for at least one year, it should be considered a useful and beneficial operation. It can be repeated indefinitely in the same ear, so far as is currently known, if the structures involved are not extensively or irreversibly damaged. Certainly improved surgical facilities and control of infection have played a significant role in the renewed application of this procedure.

When an attempt at mobilization of the stapes fails to improve hearing in one ear, it is possible that the procedure may be successful in the opposite ear. Apparently this is due to differences of structure and otosclerotic involvement in the two ears. At any rate, failure in one ear does not necessarily mark the opposite ear for failure also.

The greatest handicap under which a surgeon works is the unpredictability of results. Aside from the signs of clinical otosclerosis, nothing is revealed in the examination or the hearing tests that lends a clue as to the individual outcome of mobilization. To be sure, some audiograms appear to offer a more promising outlook than others, but singular predictability has been not only frustratingly inaccurate but impractical. Selection, then, is dependent on the nature of the hearing loss and the potential of improvement apparently available (according to the audiogram) if the stapes can be freely mobilized. Beyond recognition of clinical otosclerosis as the cause of the hearing loss, therefore, there are no reliable criteria on which a prediction of success can be based.

Complications are of negligible significance if ordinary surgical skill is employed in the execution of the operation. Should complications occur, the responsible surgeon has little difficulty in managing them effectively.

The patient finds this a relatively easy operation to endure, and when it is successful he is amazed at the ease with which hearing has been recovered. When it is a failure, at least his disappointment is not overburdened with the inconvenience and annoyance of extended postoperative care and discomfort.

SUMMARY AND CONCLUSION

The results of 400 stapes mobilization operations are analyzed according to the degree of hearing improvement obtained in three preoperative categories. It is evident that the extent of success is dependent on good neural function as indicated by the bone conduction thresholds for pure tone audiometry and a cochlear reserve represented by an air-bone conduction difference of at least 25 to 30 decibels.

Thirty-two per cent of the 400 patients operated on showed a remarkable hearing improvement, and 22 per cent achieved a hearing improvement that was helpful. In addition, there were 62 patients (15.5 per cent) whose hearing regressed after initial improvement. Many of these have been reoperated on, with increasingly sustained hearing satisfaction. Some have undergone fenestration, and others have elected to wear a hearing aid. The results have been excluded from this report and will be made the subject of another study.

In the group of 122 failures, 10 patients showed an additional loss of 10 to 15 decibels; otherwise there were no adverse effects to preclude any patient's ability to use a hearing aid at least as effectively as before the operation.

Mobilization of the stapes provides a relatively uncomplicated method of improving hearing in an appreciable number of patients whose impairment is consistent with the diagnosis of clinical otosclerosis.

It does not change the structure of the ear and involves a minimum of mental and physical inconvenience.

ZUSAMMENFASSUNG UND SCHLUSSFOLGERUNGEN

Die Ergebnisse von 400 Mobilisierungsoperationen des Steigbügels werden auf Grund der erzielten Verbesserung des Hörvermögens in drei postoperativen Kategorien nachgeprüft. Der Grad des Erfolges hängt offensichtlich vom Umfang der natürlichen Funktion ab, die durch die Schwellenwerte der Knochenleitung für die reine Tongehörmessung und durch eine kochleare Reserve, die einen Unterschied zwischen Luft-und Knochenleitung von mindestens 25 bis 30 Dezibels aufweist, ausgedrückt wird.

Bei 32 Prozent der 400 operierten Patienten war die Verbesserung des Hörvermögens bemerkenswert, bei 22 Prozent von gewissem Nutzen. In 62 Fällen (15,5 Prozent) liess die Hörkraft nach anfänglicher Besserung wieder nach. Viele von diesen wurden nachoperiert und konnten ihre Hörfähigkeit für wachsende Zeiträume erhalten. An einigen Kranken wurde eine Fensterungsoperation ausgeführt, andere zogen es vor, einen Hörapparat zu tragen. Die Erfolge in diesen Fällen bleiben in der vorliegenden Arbeit unberücksichtigt und werden in einer weiteren Untersuchung nachgeprüft werden.

In der Gruppe von 122 Versagern zeigten zehn Kranke einen weiteren Gehörverlust von 10 bis 15 Dezibels; sonst traten keine nachteiligen Erscheinungen auf, die die Fähigkeit des Kranken, den Hörapparat mit wenigstens der gleichen Wirksamkeit wie vor der Operation zu benützen, beeinträchtigt hätten.

Die Mobilisierung des Steigbügels stellt ein verhältnismässig unkompliziertes Verfahren zur Besserung des Hörvermögens bei einer bemerkenswerten Anzahl von Kranken dar, bei denen die Hörschädigung mit der klinischen Diagnose einer Otosklerose in Einklang steht.

Die Methode führt zu keiner Veränderung des Baues des Ohres und lässt sich mit einem Mindestmass von seelischer und körperlicher Beanspruchung des Kranken ausführen.

RESUMEN Y CONCLUSIONES

Se analizan los resultados de 400 operaciones de movilización del estribo de acuerdo con el grado de mejoramiento en la audición obtenido en tres categorías postoperatorias. Es evidente que el grado de éxito depende de una buena función natural como lo indican los umbrales de conducción ósea para la audiometría de tonos puros y la reserva coclear representada por una diferencia de conducción ósteo aérea por lo menos de 25 a 30 decibeles.

Treinta y dos por ciento de los 400 pacientes operados mostraron mejoría marcada y 22 por ciento lograron alguna mejoría en la audición. Además, hubo 62 pacientes (15.5 por ciento) cuyo poder auditivo dismimuyó después de una mejoría inicial. Muchos de esos casos han sido reoperados con mejoría satisfactoria y duradera en la audición. Algunos se han sometido a fenestración y otros han preferido usar aparato auditivo auxiliar. Los resultados se han omitido en este reporte y serán objeto de otro estudio.

En el grupo de 122 fracasos, 10 pacientes mostraron una disminución de 10 a 15 decibeles; por otra parte, no hubo efectos adversos que impidieran a los pacientes usar un aparato auditivo auxiliar por lo menos tan efectivamente como antes de lo operación.

La movilización del estribo proporciona un método relativamente sencillo de mejorar la audición en un número apreciable de pacientes cuyo defecto conducía al diagnóstico clínico de otosclerosis.

No cambia la estructura del oído y da un mínimo de inconvenientes mentales y físicos.

CONCLUSIONI RIASSUNTIVE

Vengono analizzati i risultati di 400 interventi di mobilizzazione della staffa, basandosi sul diverso grado di miglioramento delle facoltà uditive ottenuto. E' chiaro che la misura del successo è legata a una buona funzione naturale quale può essere indicata dai limiti della conduzione ossea per i toni puri e dalla riserva cocleare rappresentata da una differenza di almeno 25-30 decibels nella conduzione aerea-ossea.

Nel 32% dei malati si ottenne un forte miglioramento e nel 22% un miglioramento. Inoltre vi furono 62 casi (15,5%) in cui l'udito diminuì dopo un iniziale miglioramento. Molti di questi furono rioperati con successo. In alcuni era stata fatta la fenestrazione ed altri portavano apparecchi acustici. Nel gruppo dei 122 insuccessi, dieci malati ebbero una ulteriore perida di 10-15 decibels; d'altra parte non vi erano controindicazioni per l'uso dell'apparecchio per lo meno come prima dell'operazione.

La mobilizzazione della staffa è un metodo relativamente semplice per migliorare l'udito in un apprezzabile numero di casi di otosclerosi. Esso non modifica la struttura dell'orecchio e offre il minimo di inconvenienti.

RÉSUMÉ ET CONCLUSIONS

L'auteur analyse 400 cas dans lesquels il a procédé à la mobilisation des étriers. Il est évident que l'étendue du résultat obtenu dépend de la bonne fonction naturelle indiquée par les paliers de conduction osseuse pour l'audiométrie pure et une réserve cochléaire représentée par une différence de conductibilité aid-os d'au moins 25 à 30 décibels.

32% des 400 malades opérés ont montré une amélioration frappante; 22% ont récupéré une audition utile; 15,5% (62 malades) ont présenté une diminution de l'audition après une amélioration initiale. Plusieurs d'entre eux ont été ré-opérés avec des résultats satisfaisants. Quelques-uns ont subi la fénestration, d'autres ont choisi de porter un appareil auditif. Les résultats obtenus feront l'objet d'une étude ultérieure. Dans le groupe des échecs (122 cas) 10 malades ont montré une diminution auditive supplémentaire de 10 à 15 décibels.

La mobilisation des étriers constitue une méthode relativement simple et efficace dans un grand nombre de cas (otosclérose). Cette intervention ne modifie pas la structure de l'oreille; elle est suivie d'un minimum d'inconvénients physiques ou psychiques.

SUMARIO E CONCLUSOES

Os resultados de 400 mobilizações do estribo são analizados de acordo com o grau de audição obtido em três categorias pós-operatorias. É evidente que o sucesso depende de uma boa função indicada pela madida da condição óssea nos tons audiometricos puros e uma reserva coclear representada por uma diferença de condução aerea-óssea de pelo menos 25 a 30 dicibeis.

Trinta e dois por cento dos 400 pacientes operados mostraram uma notavel melhoria e 22% alcançaram um grau de audição util. Sessenta e dois pacientes (15.5%) tiveram nova perda de acuidade após haverem melhorado inicialmente. Muitos foram re-operados e ficaram satisfeitos. Outros foram submetidos a fenestração emquanto alguns preferiram usar aparelhos auxiliares da audição. Os resultados foram excluidos desta communicação e con-

stituirão assunto de novo trabalho.

No grupo de 122 insucessos, 10 tiveram uma perda adicional de 10 a 15 decibeis pelo que não houve inconveniente em que tornassem a usar aparelhos auxiliares da audição. A mobilização do estribo representa um método relativamente simples de melhorar a audição em apreciavel número de doentes cujo diagnóstico era, clinicamente, de otoesclerose.

Não há modificações estruturais da orelha e as repercussões físcias e mentais são insignificantes.

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Whenever a textbook is written of real educational worth, you may be quite certain that some reviewer will say that it will be difficult to teach from it. Of course it will be difficult to teach from it. If it were easy, the book ought to be burned; for it cannot be educational. In education as elsewhere, the broad primrose path leads to a nasty place. This evil path is represented by a book or a set of lectures which will practically enable the student to learn by heart all the questions likely to be asked at the next external examination.

—*Whitehead*

Plastic and Reconstructive Surgery

Treatment of Maxillofacial Injuries in Children

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A PAUCITY of information exists regarding the treatment of maxillofacial injuries in the younger age groups. This subject presents more problems than would occur in the adult group of patients with similar injuries.

An overall description and evaluation of the various procedures that have proved their value in the management of facial fractures in children appears to be needed. This applies particularly to young children in whom incomplete development of the dentition is present, associated with only partial development of the facial bones. Concomitant with this there is the patient's immaturity, which makes cooperation with the plastic surgeon difficult, particularly during the initial phase of treatment.

Definitive Treatment.—Whether definitive treatment can be instituted immediately depends on the exclusion of other associated injuries, such as: (1) fractures of the skull; (2) intracranial trauma; (3) thoracic and/or abdominal injuries, or (4) fractures of the extremities, etc.

Even when associated injuries are present, however, the advice and assistance of the plastic surgeon should be sought immediately:

1. To plan the future treatment of the patient as intelligently as possible.
2. To prevent any further damage or separation of the fragments, with increased adjacent injury.
3. To be assured of the maintenance of an adequate airway.
4. To control hemorrhage from the traumatized facial areas during the initial stages of the examination.

Healing of fracture sites is rapid in children, and delayed or improper reduction will cause permanent loss of function with possible disfigurement.

Dressings. — The application of bandages and dressings, except to cover lacerations, should be used with care, particularly the so-called four-tailed type of bandages used by some surgeons in immobilization of severe mandibular fractures. Upward traction with this type of bandage may elevate the mandibular fragments, causing further decrease in the free air space. This immediately becomes a dangerous problem in maintenance of the adequate airway.

Diagnosis of Fractures of the Jaw.—Children are usually apprehensive during the initial examination. Although their behavior varies, it is frequently altered adversely by the presence of the anxious parents, whose concern is quickly conveyed to the child. Examination can often be performed more efficiently without their presence. The following points should be considered:

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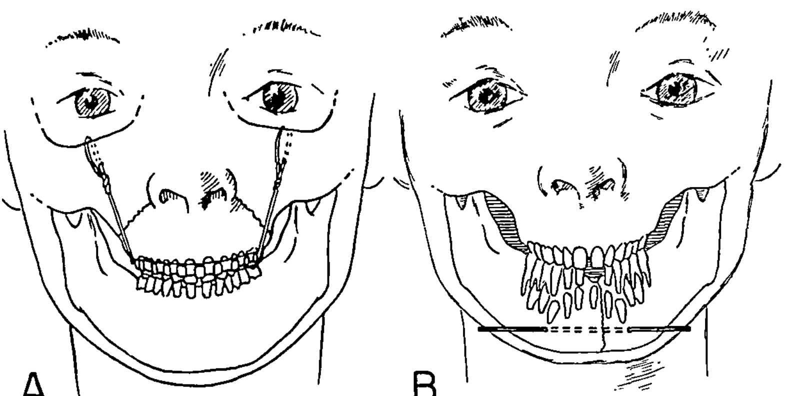

Fig. 1.—*A*, extra-oral use of orbital rims for stabilization of maxillary fractures. *B*, extra-orbital pin fixation (Kirschner wire technic). This also can be used, care being taken to avoid permanent tooth follicles.

1. Any gross abnormalities in the general contour of the face should be investigated, with a minimum of handling.
2. Light palpation will disclose any sensitive area and any irregularities of the mandible, maxillae, zygomatic arches or zygomas.
3. A careful evaluation should be made of the occlusal status and of any displacement or mobility of the jaws.
4. The presence of submucosal hemorrhagic areas should be kept in mind, since this is usually indicative of underlying damage to the bone, particularly on the lingual aspect.

Roentgenograms.—The taking of roentgenograms, accurately positioned and properly exposed, is the most important of the diagnostic procedures in the young patient.

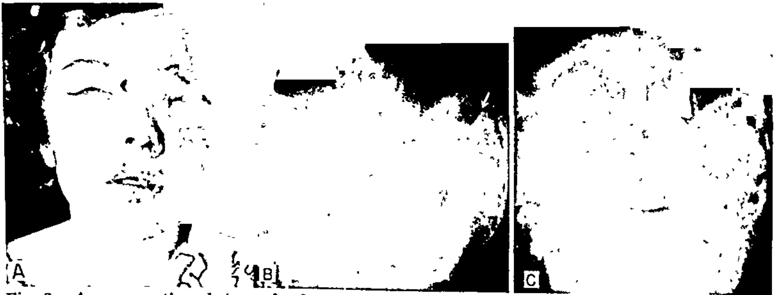

Fig. 2.—*A*, preoperative photograph of an 11-year-old girl with a severe left zygomatic fracture. *B*, preoperative Waters view of facial bones reveals posterior and lateral displacement of left zygoma. Also visualized are multiple fractures of nasal bones. *C*, postoperative Waters view revealing 32-gauge stainless steel wires immobilizing left zygoma in its normal anatomic relation. Wiring was also necessary for the nasal fractures.

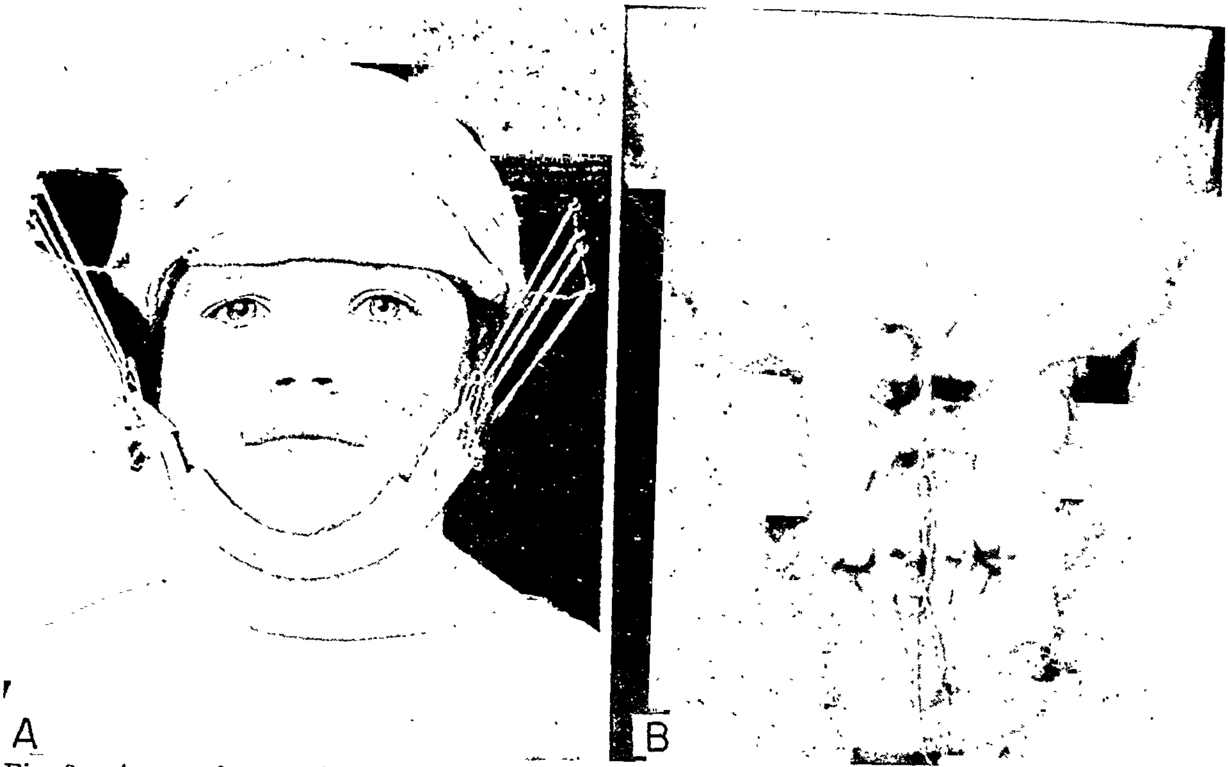

Fig. 3.—*A*, use of a traction chin strap to a light head cast in conjunction with a circumferential nasal-mandibular wire for uncomplicated mandibular fractures. *B*, posteroanterior view of mandible with circumferential stainless steel wire in place.

The following positions have been found to be the most satisfactory:

Mandibular Fractures: 1. *Right and left lateral prosections* to show the vertical ramus, angle and body of the mandible.

2. *Posteroanterior* chin-nose position of the skull to show the complete mandible.

3. *Laminagraphs,* when available, to obtain accurate visualization of the temporomandibular joint areas, condyles and coronoid processes.

Maxillary and Zygomatic Fractures: The Stereo Water position usually results in excellent visualization of the maxillae, sinuses and zygomas. A mentovertex roentgenogram clearly outlines the zygomatic arches, and any deformity that may be present can usually be seen with this type of film.

General Treatment of Maxillary and Mandibular Fractures.—The usual wiring technics used for older patients are often not suitable when deciduous teeth must be wired, as these teeth have bullous crowns, without the helpful undercuts in the cervical portions of the teeth. The permanent teeth are in various stages of eruption; their root structure is inadequately developed and only partially calcified. Eyelet wiring is possible, with use of (a) deciduous teeth (only when there has not been resorption of the root structure) or (b) permanent teeth when the root structure is fully developed, with closure of the den-

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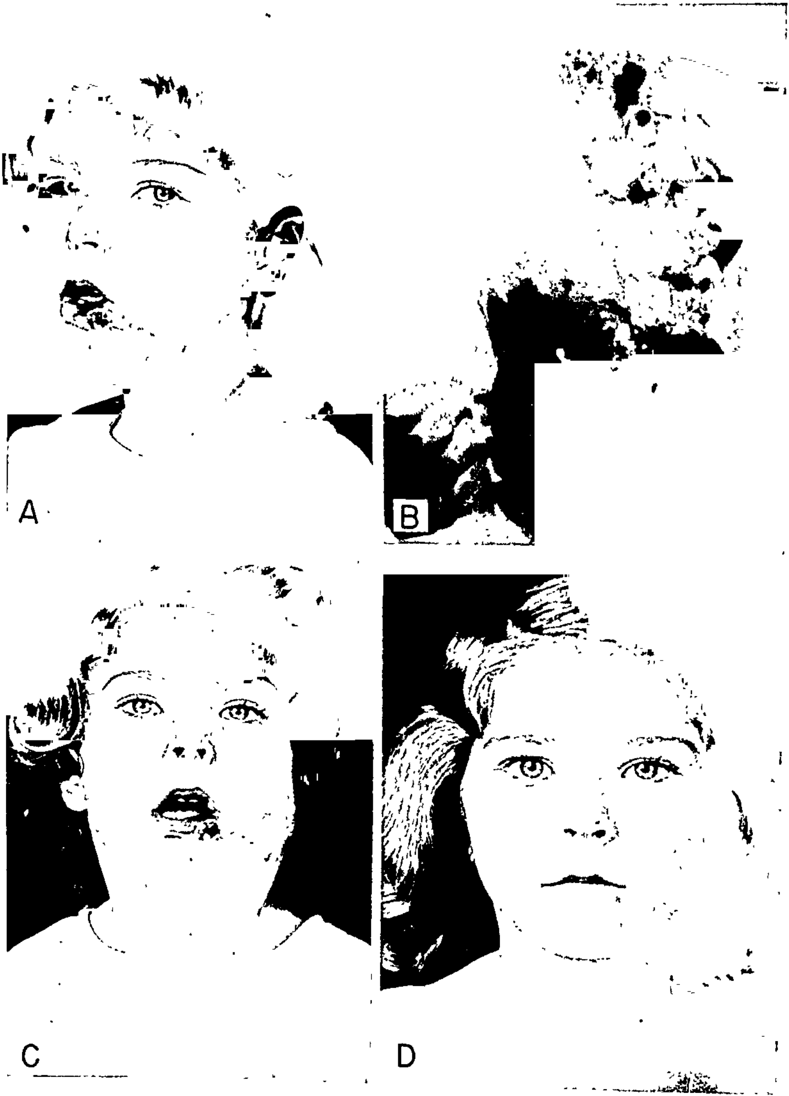
Fig. 4.—*A* and *C*, preoperative photographs of 10-year-old girl who sustained a bullet wound to left mandible and adjacent soft tissues. Point of entry can be seen near lower left oral commissure; area of exit, in the left inferior auricular area. *B*, lateral roentgenogram showing destruction of body of mandible. Minimal débridement was carried out for maximal preservation of permanent tooth follicles and mandibular growth. *D*, postoperative photograph, taken six months after discharge.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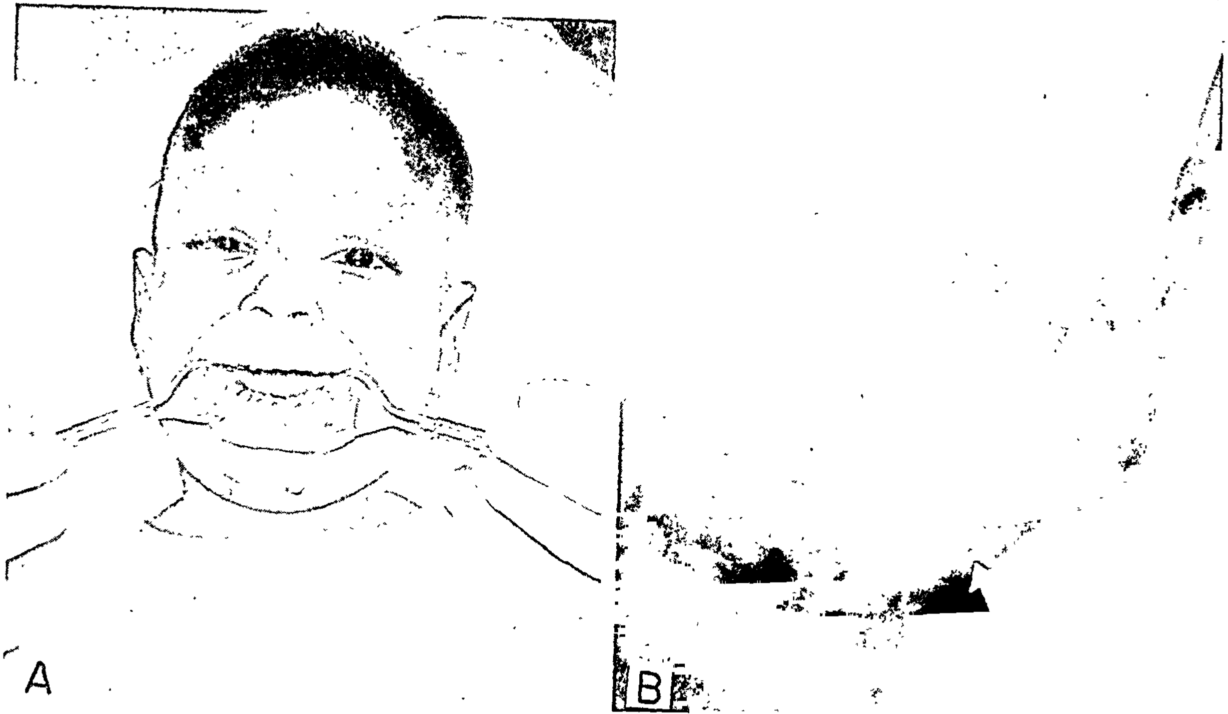

Fig. 5.—*A* and *B*, boy 8 months old with small clear acrylic splint with circumferential wiring stabilizing a mandibular fracture (*B*).

tal apices.[1]

Treatment of Maxillary Fractures.—Fractures of the maxillary area in children are most frequently due to a forward fall, incurred by tripping or falling against a protruding object or even as a result of a typical "dashboard injury" to a guest passenger in an automobile.[2]

An object thrown, such as a book, a stone, or a baseball bat, exerts a similar force. In such instances the head is turned instinctively to one side in an attempt to avoid being struck, and as a result the force is usually exerted in an oblique direction.

The high degree of elasticity of the maxillary bones in the child permits a considerable amount of distortion of the facial framework before any actual fractures occur.

1. The most common type of maxillary fracture observed in children involves separation, either partial or complete, and disruption of the labial or buccal plates of the alveolar bone around the teeth. As a result of this the teeth are loosened, because of the loss of bony structural support around them.

Treatment: Treatment of fractures of the alveolar plates consists of immobilization by supporting the loose teeth and alveolar plate on an arch bar which is stabilized on the sound, unaffected teeth. The shape of the crowns of the deciduous teeth and the lack of contact may cause some difficulty in proper immobilization. The use of orthodontic bands or caps may then become necessary.

2. Fortunately, fractures of the entire maxilla or maxillae are not frequent. When they do occur, however, and if a sufficient number of permanent teeth are present, an arch bar can be wired to the upper teeth, with use of orthodontic bands if necessary. Stabilization can be obtained for utilizing the lower teeth for the proper occlusal relation; also, if necessary, a head cast with wire traction attachments to the

maxilla can be further incorporated for immobilization of a complete fracture of the midportion of the face.

3. It may be difficult to secure anchorage for an arch bar or eyelet loop wiring in a child 7 years of age or younger, and an acrylic splint over the upper teeth may then be utilized to good advantage. The splints are made by taking colloid impressions of the upper and lower teeth and the associated related structures. This may necessitate anesthetizing the child for a short time. After this the acrylic splints can be made from the models poured from the original impressions. When the splint has been properly seated in the mouth, wires of stainless steel are inserted through the soft tissues overlying the maxillae, connecting the splint to a light plaster head cast.

4. Some inconvenience and difficulty may be encountered in maintaining a traction head cast on a child with maxillary fractures. A procedure that eliminates the use of a head cast has been described by Adams, who suggested the drilling of small holes in the infraorbital rims. Through these, stainless steel wires are threaded and looped around each of the rims, after which they are attached to the maxillae in order to maintain them in their normal anatomic position.[3] This works very satisfactorily when only the maxillae are fractured (Fig. 1 *A*).

Zygomatic Fractures: The majority of zygomatic and zygomatic arch fractures can be easily handled by either of two means. 1. The Gillies approach, utilizing a periosteal elevator which is inserted through an incision in the temporal area. The periosteal elevator follows the path of the temporal muscle under the zygomatic arch, and any malalignment or depressed fracture, if one exists in the zygomatic process of the temporal bone or the

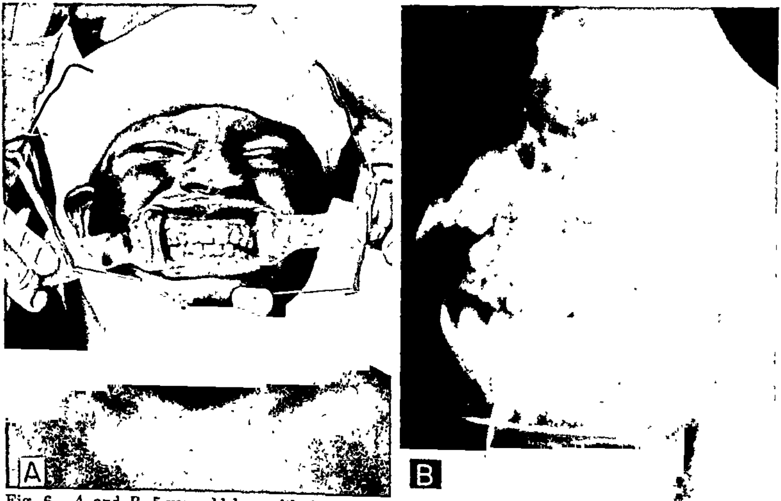

Fig. 6.—*A* and *B*, 5-year-old boy with fracture of mandible in region of symphysis and right body. Immobilization was obtained by careful insertion of Kirschner wires as shown in *B*.

zygomatic process of the zygoma, can be easily elevated.

The elevator can be inserted further inferiorly for fractures of the body of the zygoma, and in many cases elevation of the entire segment can be accomplished from this same approach.

2. *The antral approach.* A small oral incision can be made in the buccal mucosa and a maxillary sinus approach used for inferior elevation of the entire zygoma.

3. *Direct Wiring.*—Badly displaced zygomatic fractures should be reduced and maintained in position by utilizing an extraoral approach. A small 28-gauge stainless steel wire is threaded across the fracture lines of the zygoma. The fracture sites can then be maintained in their normal anatomic relation without any additional appliances (Fig. 2, *A, B* and *C*).

Mandibular Fractures: Fractures of the mandible considerably outnumber those of the maxilla. This is due to several factors: (1) the more vulnerable position of the lower jaw; (2) its mobility; (3) the horseshoe shape of the mandible, and (4) the lack of any shock-absorbing mechanism.

In contrast, the maxillae are formed of more cancellous bone, which is soft and spongy, supported and protected by the cranium above, by the zygomatic arches on the sides and by the mandible below. This middle area of the face is also proportionately smaller and in a less conspicuous location.

Treatment of Mandibular Fractures: 1. Uncomplicated fractures of the body of the mandible with little displacement are treated by manipulation of the fragments into proper position and alignment to establish occlusion, with the patient under general anesthesia. A supporting plaster head cast and chin strap are then utilized, in combination with eyelet wiring of the teeth if there are sufficient unresorbed deciduous teeth or erupted permanent teeth (Fig. 3, *A* and *B*, and Fig. 4, *A, B, C* and *D*).

2. Complicated fractures with marked displacement of the mandibular fragments will necessitate reduction with the patient under anesthesia and the use of an acrylic splint after impressions of the teeth have been taken and a splint formed to reestablish the occlusal relation. The prosthesis is then stabilized, preferably by circumferential wiring to stabilize the splint to the mandible (Fig. 5, *A* and *B*).

Feeding is simplified by utilizing the splint technic, as the normal movements of the mandible can be retained even though the mandibular fragments are immobilized. This is extremely important with small children and is the treatment of choice in this group.

3. The use of extraoral pin fixation (Kirschner wire) is necessary in isolated instances. The routine use of this method is not to be encouraged, since when pins are driven into the mandible it must be done so with extreme care, because of their possible deleterious effect on the permanent tooth follicles. The anterior portion of the mandible is particularly suitable for insertion of pins when this method is indicated[4] (Fig. 1 *B*, 6 *A* and 6 *B*).

4. In young children, condylar fractures with minimal displacement should be treated conservatively.

Treatment:

1. Maintenance of dental occlusion, usually done for three or four weeks, by means of a light plaster head cast and traction splint supporting the chin. This is made simply by utilizing a heavy muslin cloth connected to a light head cast by means of rubber band traction.

2. Maintenance of condylar fractures for three or four weeks without the use of head cast. This can be accomplished by using a circumferential type of wire around the mandible, inserted through the nasal

spine and the maxilla. This single wire will maintain the teeth in normal occlusion without necessitating additional support.

3. Displaced condylar fractures must be carefully evaluated as to their prognosis and the possibility of growth abnormalities due to any extensive condylar damage. Open reduction and wiring or external pinning is occasionally the treatment of choice when the condylar fragment interferes with normal mandibular motion.

CONCLUSIONS

Fractures of the facial bones in children are relatively infrequent. When they do occur, definitive treatment should be instituted promptly. Certain precautions and principles not usually adhered to with elderly patients should be observed.

1. An appliance or procedure should be kept as simple as possible, in order to restore proper occlusion and function.
2. There should be minimal interference with the deciduous and underlying permanent tooth follicles.
3. Elbow restraints may be necessary to prevent dislodgement of the previously applied oral appliances.
4. Precautions should be taken to allow proper feeding and administration of fluids, regardless of type of appliance used.

SCHLUSSFOLGERUNGEN

Knochenbrüche des Gesichtsschädels kommen bei Kindern verhältnismässig selten vor. Wenn sie auftreten, muss sofort eine energische Behandlung eingeleitet werden. Gewisse Grundsätze der Behandlung und Vorsichtsmassnahmen, die bei älteren Kranken im allgemeinen nicht beachtet werden, müssen innegehalten werden.

1. Die angewandten Verfahren und Apparate sollen möglichst einfach gehalten sein, um eine normale Schlussbissstellung und Funktion wiederherzustellen.
2. Die Milchzähne und die darunter liegenden Zahnsäckchen der bleibenden Zähne sollen so wenig wie möglich angetastet werden.
3. Das Anlegen von immobilisierenden Ellbogenschienen mag notwendig sein, um das Losreissen angewandter Apparaturen im Munde zu verhüten.
4. Welche Art von Mundschienen immer bevorzugt sein mag, muss für die Möglichkeit ausreichender Nahrungs- und Flüssigkeitszufuhr gesorgt werden.

CONCLUSOES

As fraturas dos ossos nazais nas crianças são relativamente raras. Quando ocorrem, o tratamento definitivo deve ser feito imediatamente. Certas precauções e princípios não relacionados com esses acidentes nos adultos devem ser observados.

1. Os métodos de redução devem ser os mais simples possiveis porem devem manter a imobilização e restabelecer as funções.
2. Devem ter interferência mínima com os elementos dentarios já migrados e também com os folículos dentarios ainda retidos.
3. A imobilização do cotovelo poderá ser necessária para evitar que a criança perturbe a fixação das amarrias interdentarias.
4. Devem ser tomadas as medidas adequadas para alimentação de administração de líquidos, seja qual for o tipo de imobilização usado.

CONCLUSIONI

Le fratture delle ossa facciali nei bambini sono relativamente rare. Quando esse si verificano bisogna iniziare con prontezza il trattamento. Devono osservarsi alcune regole che di solito non si applicano a persone più anziane.

orally three times a day.

Viomycin. Because of its toxicity, this is usually held in reserve for those who become resistant to the other drugs or require it for a limited period, e.g., during operation. The dose is 1 to 2 Gm., administered intramuscularly, twice weekly.

Operation. — Surgical intervention is still necessary in many cases, despite the effective medication of pulmonary disease. The lessened incidence on hospitalization suggests that the primary anorectal infection has been controlled or prevented by medication. Some sinuses are healed by chemotherapy alone, and an occasional fistula may be temporarily healed; the latter, however, tend to recur. These infected tracts vary so much in site, size, number of branching channels, tortuosity and depth that general statements may be misleading. The need of surgical measures has not diminished to such a degree as in some other fields—in mastoid disease, for example. In the general surgical service at the hospital, patients with persisting pulmonary cavities are operated upon after about six months of chemotherapy, when after two or three months serial roentgenograms show little or no change. Patients with active uncontrolled pulmonary disease should not be operated upon. A perianal abscess, of course, will be incised or drained. A short superficial sinus or fistula may be incised but this should be deferred, since the situation is not urgent.

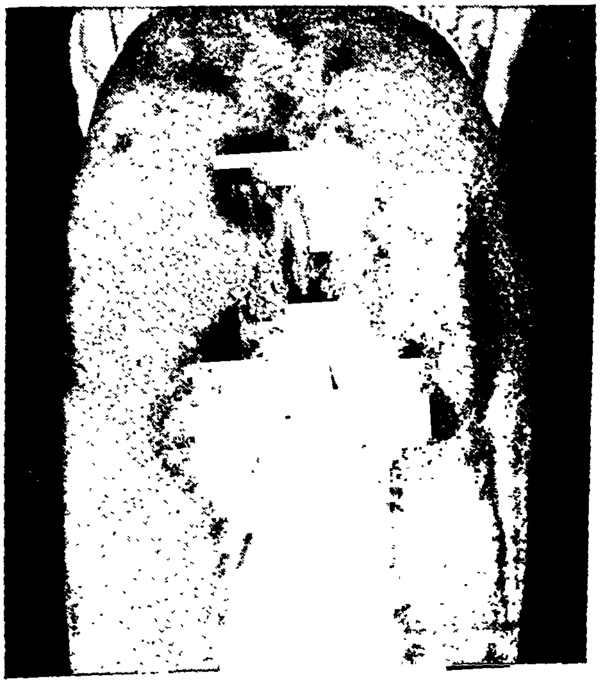

Fig. 1.—Extensive bilateral fistula-in-ano.

Fistulectomy.—As to the exact technic, standard surgical procedures are carried out. The fistula is examined with flexible silver wire probes and, at times, the internal orifice with a crypt hook. Into one of the orifices, usually external, a colored gel or bismuth paste is injected and its exit from other orifices noted. An exact anatomic diagnosis is thus ordinarily obtained. The sphincter is cut at a right angle to the direction of its fibers. When the tract crosses the muscle obliquely a relieving additional short incision may be required to enable the main incision to be made at a right angle to the sphincteric fibers, or as nearly so as possible. Division of the external sphincter in more than one site is avoided, as is extending the incision too high in the bowel wall, thus cutting all the fibers of the internal sphincter. In a word, the usual surgical principles are applied. If the infected tract is short and relatively superficial it may be entirely excised, i.e., a fistulectomy may be done; if it is deeper or if lateral tracts exist, it is incised throughout its length, a fistulotomy being performed. If the latter, the tract is cleaned of granulation tissue. In both, the wound is shaped to assure good drainage; conservative excision of the edges of the skin is often but not always required; elimination of the internal orifice is of paramount importance; both openings are excised. Hemostasis should be exact and complete. A gauze strip is placed in the wound and removed in two or three days;

no further "packing" is used. The patient is allowed to get up when he feels ready, usually on the second to the fourth postoperative day. If continuous bed rest has been ordered this does not apply. The ordinary postoperative measures are used; drawing the finger through the anus every day or two to prevent pocketing or bridging is worth mention.

To epitomize the foregoing comments: Surgical measures are still required in most cases of tuberculous fistula-in-ano. Of first importance is the activity and extent of the pulmonary disease, of which the fistula is merely a complication. The time of operation, except for incision of a perianal abscess, is determined by the activity of the pulmonary disease. In performing a fistulectomy, the standard procedures are used.

CRITERIA FOR DIAGNOSIS

Disagreement exists as to criteria for diagnosis. My experience indicates that the results of histopathologic examination supply the *only* criterion of importance.

It is well known and, in my opinion, a generally accepted fact that a clinical diagnosis founded only on the gross pathologic picture is absolutely undependable, even though the opinion is that of one thoroughly conversant with the lesion. *Not so well known and not so widely accepted* are the real value of histopathologic examination of suspected tissue and the limited reliability of guinea pig inoculation with preparations of tissue excised from the fistulous tract or the wall of the abscess cavity.

The advocates of guinea pig inoculation as the most valuable means of diagnosing tuberculosis in cases of perianal inflammatory and suppurative disease, particularly abscess and fistula, in most instances accept their observations at face value. The fact is there is a large element of error here that is either unknown or overlooked.

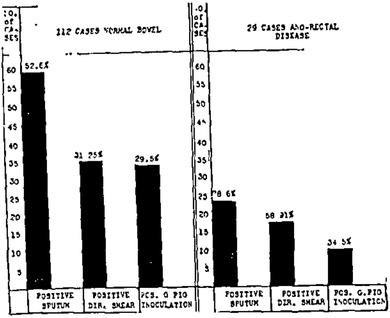

Fig. 2.—Charted observations in 141 of the 200 cases examined.

In a study of 200 patients with pulmonary tuberculosis, reported from this service (Fig. 2), it was determined that not only viable but virulent tubercle bacilli were present in the lower portion of the sigmoid and in the rectum in more than 30 per cent. Of patients with anorectal abscess or fistula, 34 per cent had such bacilli present in the last foot of the bowel within an hour after an enema.

In a third of the cases, therefore, tubercle bacilli may enter the rectal or anal orifice (the internal opening) of the fistulous tract. Accordingly, whether the fistula is a tuberculous process or not, tubercle bacilli may be present in it in a third of the cases. At the time the report was published, this large margin of possible error had not been considered in any article on the subject in the current literature. One reason for this is that so little work had been done to determine the incidence of viable tubercle bacilli in the terminal portion of the bowel.

It is absolutely impossible to wash or treat tissue excised or curetted from these fistulous tracts in any way known to bacteriologists, so that contamination of tisorally three times a day.

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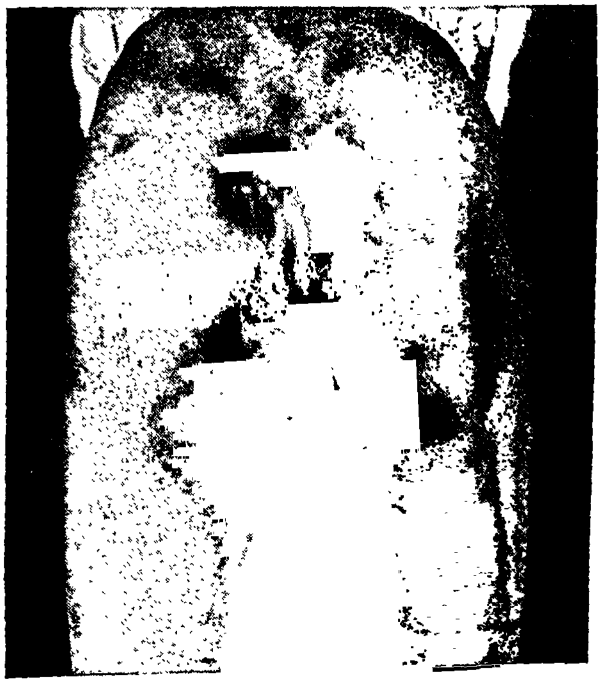

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3. The presence or absence of viable tubercle bacilli in the excised lesions as demonstrated by culture or animal inoculation. Here, however, positive results are subject to a 30 per cent error in cases of positive sputum.

4. Tuberculous granulation tissue observed on histopathologic study. This is the most important and the only pathognomonic test when the results are positive.

On a single section this is only positive in about 50 per cent of cases, but when run in serial section is at least 75 per cent efficient. Staining only every third section is usually all that is necessary, and even staining every tenth gives good results.

The absolute figures depend upon the number of the remaining 25 per cent that are nontuberculous. If the results of animal tests or cultures are positive and those of the sputum test are negative, the lesions may be added to those detected by histopathologic examination. If the specimen comes from a positive tuberculous patient the probability is that it is tuberculous, but in the absence of the aforementioned criteria it must be accepted as nontuberculous or held in doubt until proved otherwise by the proper methods.

Author's Note: Acknowledgment is made to M. L. Lichtenstein and Henry C. Sweany, associates at Municipal Tuberculosis Hospital, from whom I have quoted freely.

RESUMEN Y CONCLUSIONES

La opinión acerca de la naturaleza de las lesiones fistulosas de la región anal son dependientes de varios factores:

1. La historia clínica y la aparición de la lesión.

2. La historia clínica de tuberculosis activa o apagada, o evidencia de la misma for exámenes radiológicos o de laboratorio.

3. La presencia ó ausencia del bacilo tuberculoso viable en las lesiones extirpadas demostrado por cultivo ó por inoculación animal. Aquí, sin embargo, los resultados positivos están sujetos a 30 por ciento de error en caso de esputo positivo.

4. Tejido de granulación tuberculoso observado en estudios histopatológicos. Este es el test mas importante y el único patognomínico cuando los resultados son positivos.

En un corte único solo es positivo en cerca del *50 por ciento* de casos, pero cuando se hacen cortes *seriados* es por lo menos *75 por ciento* eficiente. *Generalmente es suficiente* teñir *uno de cada tres cortes* y aún tiñendo *uno de cada diez se logran buenos resultados.*

Las cifras absolutas dependen del número de casos no tuberculosos incluidos en el 25 por ciento restante.

Si los animales ó los cultivos son positivos y el esputo es negativo, esos casos pueden sumarse a los encontrados por examen histopathológico.

Si los especímenes provienen de un paciente tuberculoso positivo la probabilidad es que sea tuberculoso, pero en ausencia del criterio mencionado las lesiones deben aceptarse como no tuberculosas ó mantenidas en duda hasta que se demuestre lo contrario con métodos apropiados.

RÉSUMÉ ET CONCLUSIONS

Une opinion décisive quant à la nature des lésions fistuleuses de la région anale sera influencée par divers facteurs:

1. Anamnèse clinique et aspect de la lésion.

2. Anamnèse clinique d'une tuberculose en activité ou latente, ou évidence radiologique ou bactériologique de tuberculose.

3. Présence ou absence de bacilles tuberculeux actifs dans la lésion excisée, démontrée par la culture in vivo ou in vitro. Là cependant des résultats positifs sont sujets à erreurs dans 30% des cas avec crachats tuberculeux.

4. Granulation tissulaire tuberculeuse observée lors de l'examen histopatholo-

sue by viable tubercle bacilli can be positively excluded. It is just as difficult as actually sterilizing the skin of the hands. It follows that the use of culture or inoculation to determine the character of a fistula in patients with active pulmonary tuberculosis is partially fruitless, since the results must be qualified by a 30 per cent possibility of error. After positive results have been obtained by either of these methods, the pathologist can make, with accuracy, only the following statement:

"The culture or guinea pig test has given positive results, but it may be wrong, with regard to determining whether or not this is a tuberculous fistula, in at least a third of the cases."

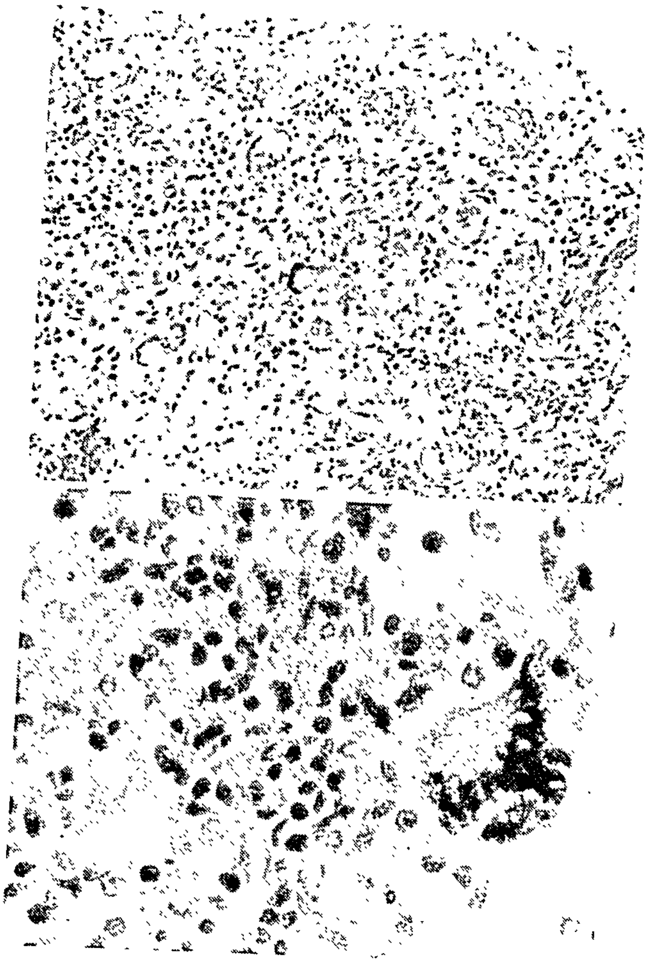

Fig. 3.—*A*, low power view of tuberculous granulation tissue. There is a prominent giant cell in the center, and several capillaries are present, as are several other giant cells. Some glandular structures are noted in the right upper field. *B*, high power photomicrograph of tuberculous granulation tissue. Note the Langhans giant cells on the left, with lymphocytes, epithelioid cells and fibroblasts comprising the remainder of the cellular elements.

The chief difficulty arises in deciding what to call tuberculous granulation tissue. There is little question about tissue with capillaries, fibroblasts, monocytes and typical horseshoe-shaped Langhans' giant cells. It is when the tissue is atypical that the difficulty is greatest. Upon analysis, however, it is not the problem it may seem. In the first place, most nonspecific abscesses are composed of acutely inflammatory tissue that can be eliminated promptly. Chronically or subacutely inflamed tissue may or may not include tuberculous granulation tissue. In such borderline cases the clinical appearance of the lesions, the clinical history and the bacteriologic observations will help to supplement decision when the lesions are questionable.

Some slides show chronic granulation tissue with a predominance of monocytic cells containing atypical giant cells, but about these there need be little question of a diagnosis.

In others there are chronic granulation tissue and focal necrosis with a predominance of monocytic cells, some of which are arranged in atypical giant cells with 4 to 8 nuclei. They are definitely not due to any false arrangement of the cells of the rectal mucosa, which may at times be confusing.

SUMMARY OF DIAGNOSTIC CRITERIA

The ultimate opinion as to the nature of fistulous lesions of the anal region will be influenced by various factors:

1. The clinical history and appearance of the lesion.

2. The clinical history of active or quiescent tuberculosis, or evidence thereof on roentgen or laboratory examination.

nelle sezioni in serie è positivo nel 75%.

E' sufficiente colorare una sezione ogni tre o anche una ogni 10. Se l'animale o le colture sono positive e lo sputo è negativo questi casi devono essere uniti a quelli stabiliti con gli esami istopatologici. In assenza di questi criteri la lesione deve essere considerata come non tubercolare o almeno lasciata in dubbio fino a che non venga provato il contrario.

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Martin, C. L., and Sweany, H. C.: Streptomycin in the Treatment of Tuberculosis of the Rectosigmoid Region and Anus, Surg., Gynec. & Obst. 90:681-685 (June) 1950; Tuberculosis Anal Abscess, Fistula, Criteria for Diagnosis, ibid. 71: 294-296 (Sept.), 1940.

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gique. Ce symptôme est *le plus important* et le seul test *pathognomonique* en cas de résultats positifs.

Avec une seule coupe ce test n'est positif que dans *50%* des cas, mais il est positif dans au moins *75%* des cas lors de *coupes en séries. Il suffit habituellement* de colorer *une coupe sur trois;* l'on obtient même de *bons résultats* avec *une coupe sur dix.*

Les chiffres absolus dépendent du nombre des 25% restants qui ne sont pas tuberculeux. Les cas où l'animal ou les cultures sont positifs avec crachats négatifs, peuvent être ajoutés à ceux trouvés par l'examen histopathologique. Si les spécimens proviennent d'un malade à tuberculose positive il est probable qu'ils seront tuberculeux, mais en l'absence du critère mentionné plus haut les lésions doivent être considérées comme non tuberculeuses, ou bien il faut conserver un doute jusqu'à ce que le cas soit confirmé par les méthodes indiquées.

ZUSAMMENFASSUNG UND SCHLUSSFOLGERUNGEN

Die endgültige Entscheidung über die Art von Fisteln in der Aftergegend wird durch folgende Faktoren beeinflusst:

1. Krankheitsgeschichte und klinische Erscheinung der Erkrankung.

2. Vorgeschichte oder Röntgennachweis oder Laboratoriumsbefunde einer aktiven oder ruhenden Tuberkulose.

3. Nachweis oder Ausschluss lebensfähiger Tuberkelbazillen durch Kulturen oder Tierversuche in dem herausgeschnittenen kranken Gewebe. Hier kommt es allerdings zu Irrtümern in 30 Prozent von positiven Ergebnissen, wenn die Sputumuntersuchung positiv ist.

4. Beobachtung tuberkulösen Granulationsgewebes bein histopathologischer Untersuchung. Dies ist im positiven Falle die *wichtigste* und die einzige *pathognomonische* Untersuchung.

Wenn nur ein Schnitt untersucht wird, gelangt man zu etwa *50 Prozent* positiven Fällen, macht man jedoch *Serien*schnitte, erreicht man mindestens *57 Prozent. Man braucht gewöhnlich nur jeden dritten Schnitt* zu färben, und sogar die Färbung jeden *zehnten Schnittes ergibt gute Resultate.*

Die absoluten Zahlen hängen von der Anzahl der verbleibenden 25 Prozent ab, die nicht tuberkulös sind. Die Fälle, bei denen das Sputum negativ, aber der Tierversuch oder die Kulturen positiv sind, können zu denen mit positiver histopathologischer Untersuchung hinzugefügt werden. Wenn die Präparate von einem positiv tuberkulösen Kranken stammen, so besteht die Wahrscheinlichkeit, dass es sich um eine tuberkulöse Veränderung handelt, beim Fehlen der oben erwähnten Kriterien, jedoch muss die Veränderung als nicht tuberkulös oder als zweifelhaft angesehen werden, solange kein gegenteiliger Beweis durch geeignete Methoden geliefert ist.

RIASSUNTO E CONCLUSIONI

Riguardo alla natura delle lesioni fistolose della regione anale l'ultima opinione è che esse siano influenzate da diversi fattori:

1. La storia clinica e il primo apparire della lesione.

2. La storia clinica o radiografica o di laboratorio di una tubercolosi attiva o latente.

3. La dimostrazione con la coltura o la inoculazione in animali della presenza o assenza di bacilli tubercolari nella lesione. Bisogna notare che si ha il 30% di errori nei casi di sputo positivo.

4. L'osservazione, con lo studio istopatologico, di tessuto di granulazione tubercolare; è questo, quando i risultati siano positivi, *l'unico esame patognomonico* ed *il più importante.* Nelle singole sezioni esso è positivo solo nel 50% dei casi, ma

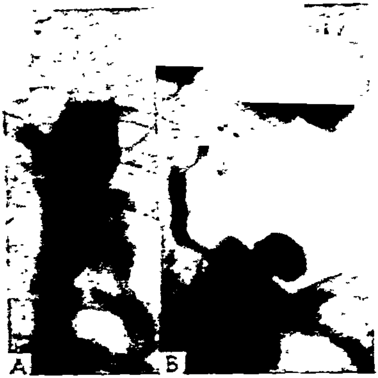

Fig. 3 (Case 3).—A, severe corrosive stricture of esophagus due to ingestion of potash. B, roentgenogram showing rapid emptying of transplanted colon.

Ileotransverse anastomosis was done to restore the continuity of the intestinal tract. Retrosternal blunt dissection of the anterior portion of the mediastinum from the xiphoid to the neck was performed, and an incision was made on the anterior border of the left sternomastoid. The proximal end of the isolated loop of the colon was brought up to the neck, where an ileostomy was performed. The distal end of the loop of colon was implanted end to side in the stomach. The abdomen was closed.

From the fourth postoperative day the patient was fed by means of a catheter introduced into the stomach from the cervical ileostomy. On the twentieth day the cervical portion of the esophagus was transected above the constricted portion, and an end-to-side anastomosis to the ileum was performed. The aboral end of the esophagus was partially sutured and drained by means of a tube. Feeding was continued through the ileostomy for ten more days, after which the catheter was withdrawn and the ileostomy closed.

Roentgen examination demonstrated a satisfactory functional swallowing mechanism in the transplanted colon (Fig. 1B). Twenty days after the second intervention the patient was discharged, with a gain in weight of 3 Kg.

Case 2.—A woman aged 18 stated that three months earlier she had drunk sulphuric acid by mistake. Cicatricial stenosis of the esophagus followed and was treated by bougienage, without result. The patient could swallow liquids in small quantities. On admission she had lost 12 Kg. in weight. Roentgenograms showed an extensive stricture of the thoracic portion of the esophagus, beginning at the height of the sternoclavicular joint (Fig. 2A).

The first operation was performed on Sept. 22, 1955. The same procedure was applied as in Case 1, with the difference that the right colic artery was in this case well developed and could be used as the vascular pedicle of the mobilized right half of the colon. Retrosternal transposition of the loop was performed, with left cervical ileostomy and implantation into the stomach of the lower end of the colon. Intestinal continuity was reestablished by ileotransverse anastomosis. Food was given by means of a rubber tube introduced into the stomach from the ileostomy. At a second stage, twenty days later, side-to-end anastomosis of the ileum to the transected esophagus was done. The ileostomy was closed a month after the first intervention.

Roentgenograms demonstrated good function of the transplanted colon (Fig. 2B). The patient was discharged forty days after the first operation, having gained 8 Kg. in weight.

Case 3.—A woman aged 19 stated that six months prior to admission she had swallowed potash, which produced a severe corrosive stricture of the esophagus. Conservative treatment was considered unpromising. Only small

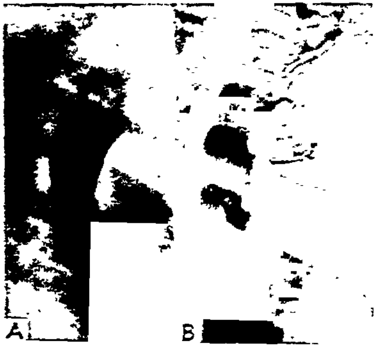

Fig. 4 (Case 4).—A, total obstruction of thoracic portion of esophagus beneath fifth dorsal level. B, barium roentgenogram showing satisfactory swallowing mechanism.

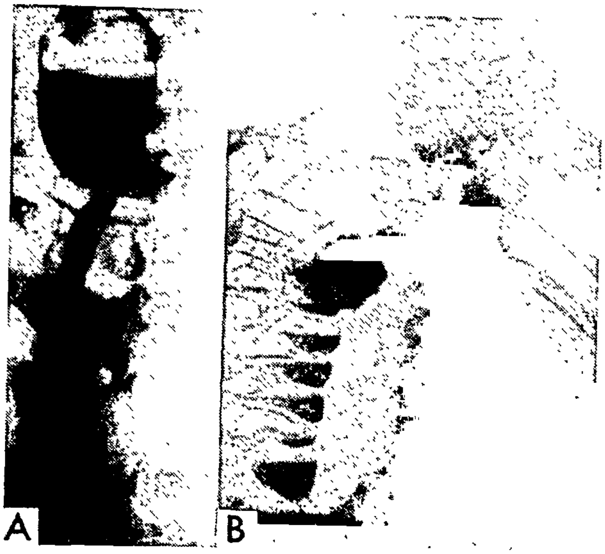

Fig. 1 (Case 1).—*A*, stricture of esophagus beginning at sixth cervical level. *B*, roentgenogram showing satisfactory swallowing mechanism in transplanted colon.

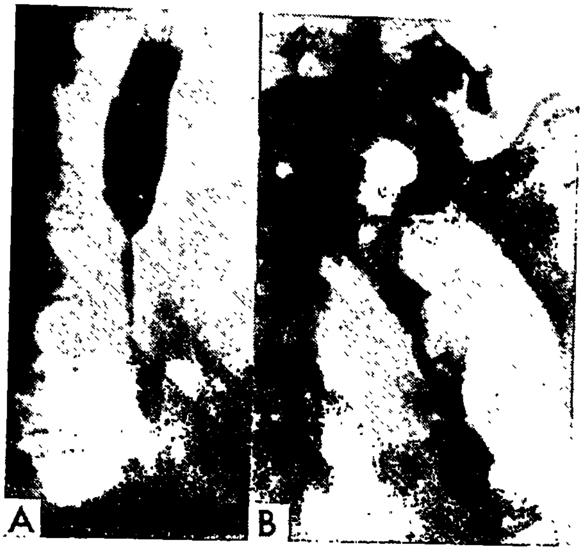

Fig. 2 (Case 2).—*A*, extensive stricture of thoracic portion of esophagus. *B*, roentgenogram showing good postoperative function (see text).

well as preservation of all esophageal blood vessels, to prevent necrosis of the esophageal stump after anastomosis.

In my opinion, the use of the right half of the colon for reconstructing the scarred esophagus should be preferred, for the following reasons: (1) because the transplantation is isoperistaltic and (2) because the continuity of the intestinal tract is reestablished by a typical ileotransversostomy, whereas in transposition of the left half of the colon or the transverse portion a colocolonic anastomosis must be performed, and this is followed by a higher mortality rate.

Retrosternal transposition, as compared with transpleural reconstruction of the esophagus, presents the advantage of not being attended by pleural complications. As compared with subcutaneous presternal transposition, it has the advantage of requiring a lesser length of colon.

I am also convinced of the advantage of postponing the ileoesophageal anastomosis, performing it in a second stage, because this permits alimentation by means of a rubber tube introduced into the stomach through the cervical ileostomy. Gastrostomy therefore becomes superfluous. There is also less danger of dehiscence if anastomosis with the esophagus is performed in a second stage, because the blood supply of transplanted colon is given the necessary time to readjust.

REPORT OF CASES

CASE 1.—The patient, a woman aged 20, stated that six months earlier she had swallowed sulphuric acid by mistake, whereupon cicatricial stenosis of the esophagus had developed. She was treated by bougienage, without appreciable results. On admission here she was able to swallow liquids. Her weight was 38 Kg. Roentgenograms demonstrated an extensive stricture of the esophagus, beginning from the sixth cervical level (Fig. 1*A*). The first operation was performed on Nov. 24, 1954. A midline laparotomy was done. An anomaly of the colic artery was present, precluding mobilization of a sufficient length of the colon, if pedicled on this vessel. The right branch of the middle colic artery, however, provided an adequate blood supply for the right half of the colon, so that the right colic artery could be sacrificed. The ileum was transected 10 cm. orad to the ileocecal valve. Appendectomy was done. The cecum, the ascending portion of the colon and the hepatic flexure were mobilized. Transection of the transverse and

SUMMARY AND CONCLUSIONS

Five cases are reported of extensive cicatricial stenosis of the esophagus, treated during the past two years by retrosternal transposition of an isolated colonic loop. In 4 cases the right half of the colon and the terminal portion of the ileum were transplanted; in 1 case, the transverse portion of the colon, together with the splenic flexure. Reestablishment of the continuity of the intestinal tract was effected in 4 cases by an ileotransverse anastomosis and in 1 case by a colocolonic anastomosis of the ascending with the sigmoid portion of the colon. One end of the isolated loop of colon was implanted into the stomach (in 4 cases in conformity with peristalsis and in 1 case contrary to it). The other end was brought up to the left cervical region, where in 4 instances an ileostomy was performed and in 1 a colostomy of the descending portion of the colon. Ileostomy or colostomy was used to feed the patient, a rubber tube being introduced into the stomach during the stages of reconstruction. At a second stage an end-to-side anastomosis of the transected cervical portion of the esophagus with the ileum or the colon was carried out, and at a third stage the ileostomy was closed. All patients were discharged with satisfactory functional results and with notable gains in weight. Retrosternal transposition through the anterior portion of the mediastinum presents many advantages, such as the absence of pleural complications and the fact that it requires a lesser length of mobilized colon than does subcutaneous transposition. Replacement of the esophagus by the right half of the colon is regarded as the method of choice, because of the isoperistaltic transposition. Anomalies of the right colic artery may eventually preclude utilization of the right half of the colon, however, in which case the transverse or the left portion should be transplanted in preference to the small intestine.

RIASSUNTO E CONCLUSIONI

Vengono riferiti 5 casi di estese stenosi cicatriziali dello esofago trattate, negli ultimi due anni, con la trasposizione retrosternale di un'ansa isolata del colon. In 4 casi furono trapiantati la metà destra del colon e la porzione terminale dell'ileo; in 1 caso fu trapiantato, invece, il colon trasverso con la flessura splenica. La continuità del tratto intestinale fu ristabilita in 4 casi con un'anastomosi ileotrasversa e in un caso con un'anastomosi colocolica dell'ascendente con la porzione sigmoidea del colon. Una estremità dell'ansa isolata venne impiantata, in 4 casi, nello stomaco in senso isoperistaltico ed in 1 caso in senso contrario. L'altra estremità fu inserita alla regione cervicale dove, in 4 casi un ileostomia o colostomia servì ad alimentare il paziente, dopo che durante la fase ricostruttiva, gli era stato introdotto un tubo di gomma nello stomaco. In un secondo momento si praticò un'anastomosi terminolaterale della porzione cervicale dell'esofago con l'ileo o il colon; e in un terzo stadio si chiuse l'ileostomia. Tutti i pazienti vennero dimessi con ottimi risultati dal punto di vista funzionale e tutti notevolmente aumentati di peso.

La trasposizione retrosternale attraverso il mediastino anteriore presenta molti vantaggi quali l'assenza di complicazioni pleuriche e un tratto di colon mobilizzato minore di quello richiesto nella trasposizione sottocutanea. La sostituzione dell'esofago con il colon destro è il metodo d'elezione data la trasposizione isoperistaltica. Può verificarsi che un'anomalia dell'arteria colica destra precluda l'utilizzazione del colon destro, ed in tal caso si preferisce l'utilizzazione del colon sinistro o trasverso.

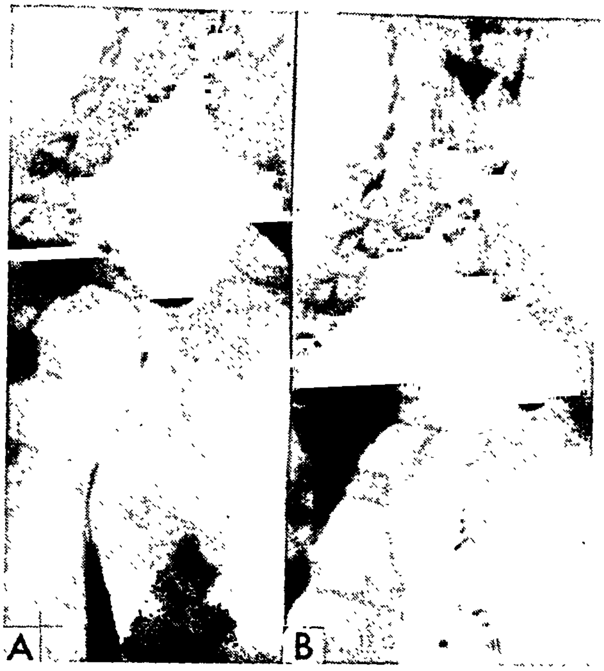

Fig. 5 (Case 5).—*A*, severe corrosive stricture of esophagus due to ingestion of potash, with extensive cicatrical stenosis beginning at third dorsal level. *B*, barium study of reconstructed esophagus, showing satisfactory functional result.

quantities of liquid could be swallowed (Fig. 3*A*). The patient had lost 10 Kg. in weight.

The first intervention took place on March 9, 1956. The right half of the colon was mobilized as in the preceding case; retrosternal transposition, cervical ileostomy and gastrocolostomy of the distal end of the isolated loop were performed, with ileotransverse anastomosis to restore continuity of the intestine. Postoperatively the patient was fed by means of a catheter through the ileostomy. After twenty days, the transected esophagus was anastomosed end to side to the ileum. Feeding through the ileostomy was continued for ten days, after which the stoma was closed. Roentgen control showed rapid emptying of the transplanted colon (Fig. 3*B*). The patient was discharged twenty days after the second operation, having gained 6 Kg. in weight.

Case 4.—A woman 22 years old, ten days before admission, took sulphuric acid. In order to nourish her, a gastrostomy had been performed in another hospital. Roentgenograms showed total obstruction of the thoracic portion of the esophagus beneath the fifth dorsal level (Fig. 4*A*). On admission the loss of weight amounted to 14 Kg. The first surgical intervention took place on March 25, 1956. A midline laparotomy was done. The right colic artery was short and displaced toward the cecum. For this reason the transverse portion of the colon, together with the splenic flexure and a part of the descending portion, was mobilized. The blood supply of the isolated loop was provided by the middle colic artery. The continuity of the intestinal tract was reestablished by end-to-end anastomosis of the ascending portion of the colon with the sigmoid. Retrosternal transposition and left cervical colostomy of the distal end of the isolated loop were performed. The proximal end was implanted into the stomach after closure of the gastrostomy. Alimentation was insured by means of a tube introduced into the stomach from the colostomy. After twenty-two days the proximal end of the transected esophagus was anastomosed end to side to the colon, and ten days later the colostomy was closed.

In the beginning there were slight disturbances of deglutition, due to the antiperistaltic transposition. Later, however, barium studies showed a satisfactory swallowing mechanism (Fig. 4*B*). When discharged, twenty days after the second intervention, the patient had gained 7 Kg. in weight.

Case 5.—A man aged 21 had severe corrosive stricture of the esophagus, due to the ingestion of potash one year before admission to the hospital. Dilatation of the stricture was never attempted, owing to its severity. Roentgenographic study revealed extensive cicatricial stenosis, beginning from the third dorsal level (Fig. 5*A*). The patient was able to swallow liquids only and had lost 10 Kg. in weight.

The first operation was performed on Sept. 9, 1956. A midline laparotomy was done. In the absence of any vascular anomaly, a typical mobilization of the right half of the colon was carried out, pedicled on the right colic artery. Retrosternal transposition, left cervical ileostomy and gastrocolostomy were then performed. The continuity of the intestinal tract was restored by an ileotransverse anastomosis. Food was given by means of a rubber tube introduced into the ileostomy. After an interval of twenty days the transected upper end of the esophagus was implanted end to side into the ileum. The ileostomy was closed ten days later. Barium studies of the reconstructed esophagus demonstrated a most satisfying functional result (Fig. 5*B*). At discharge, twenty days after the second intervention, the patient had gained 5.5 Kg.

colon droit est considérée comme la méthode de choix, en raison de la transposition iso-péristaltique. Les anomalies de l'artère colique droite peuvent éventuellement empêcher l'utilisation du colon droit; dans ce cas le transverse ou le colon gauche peuvent être transplantés, de préférence à l'intestin grêle.

RESUMEN Y CONCLUSIONES

Se reportan cinco casos de estenosis cicatricial extensa del esófago tratada por transposición retro-esternal de un asa aislada de colon, durante los últimos dos años. En 4 casos la mitad derecha del colon y la porción terminal del íleon fueron trasplantadas; en un caso el colon transverso con el ángulo esplénico. El restablecimiento de la continuidad del tracto intestinal se efectuó en 4 casos por una anastomosis íleo transversa y en 1 caso por una anastomosis colo-cólica, de la porción ascendente del colon al sigmoide. Un extremo del asa aislada de colon se implantó en el estómago en 4 casos, en forma isoperistáltica, y en un caso en forma antiperistáltica. El otro extremo se llevó a la región cervical, en 4 casos se alimentó al paciente, a través de una ileostomía ó colostomía, introduciéndose un tubo de hule en el estómago durante los tiempos de la reconstrucción. En un segundo tiempo una anastomosis término-lateral de la porción cervical seccionada del esófago con el íleon ó con el colon se llevó a cabo y en un tercer tiempo se cerró la ileostomía. Todos los pacientes fueron dados de alta con resultados funcionales satisfactorios y con notable aumento de peso.

La transposición retroesternal a través del mediastino anterior presenta muchas ventajas tales como la ausencia de complicaciones pleurales y por el hecho de que requieren menor longitud de colon movilizado que la transposición subcutánea. El reemplazo del esófago por el colon derecho se considera el método de elección para la transposición isoperistaltica. Las anomalías de la arteria cólica derecha pueden eventualmente impedir el uso del colon derecho en cuyo caso el colon transverso, ó el colon izquierdo pueden trasplantarse, siendo estos preferibles que el intestino delgado.

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The noise of the mill is heard by many; the flour is seen by few.

ZUSAMMENFASSUNG UND SCHLUSSFOLGERUNGEN

Es wird über fünf Fälle berichtet, die innerhalb der letzten zwei Jahre wegen umfangreicher narbiger Verengung der Speiseröhre mittels retrosternaler Einpflanzung einer isolierten Dickdarmschlinge behandelt wurden. In vier Fällen wurde die rechte Hälfte des Dickdarms mit der Endschlinge des Ileums, in einem Fälle der Querdarm mit der Flexura lienalis transplantiert. Die Kontinuität des Darmkanals wurde in vier Fällen durch eine Ileotransversostomie und in einem Fälle durch eine Anastomosierung des aufsteigenden Dickdarms mit dem Sigmoideum wiederhergestellt. Das eine Ende der isolierten Dickdarmschlinge wurde in den Magen eingenäht, und zwar in vier Fällen in Richtung der Peristaltik und in einem Fälle in entgegengesetzter Richtung. Das andere Ende der isolierten Dickdarmschlinge wurde in die Halsgegend verlegt, wo in vier Fällen eine Ileostomie oder eine Kolostomie zur Ernährung des Kranken benützt wurde; während der verschiedenen Stadien der Behandlung wurde ein Gummirohr benützt, das in den Magen eingeführt war. In einer zweiten Sitzung wurde eine End-zu-End-Anastomosierung des durchschnittenen Halsabschnittes der Speiseröhre mit dem Ileum oder dem Kolon ausgeführt, und in einer dritten Sitzung wurde die Ileostomie geschlossen. Alle Kranken wurden mit befriedigenden funktionellen Resultaten und mit einer bemerkenswerten Zunahme an Gewicht entlassen.

Die retrosternale Verlagerung des Darmes durch das vordere Mediastinum bietet viele Vorzüge wie z. B. das Ausbleiben von Komplikationen seitens des Rippenfells und die Tatsache, dass die Mobilisierung einer kürzeren Kolonschlinge ausreicht, als die subkutane Verlagerung erfordert. Die rechte Hälfte des Dickdarms eignet sich am besten als Speiseröhrenersatz wegen der isoperistaltischen Verlagerung. Anomalien der rechten A. colica können allerdings die Verwendung des rechten Dickdarms unmöglich machen. In diesen Fällen ist eine Transplantation des Querdarms oder des linken Kolons einer Dünndarmtransplantation vorzuziehen.

RÉSUMÉ ET CONCLUSIONS

L'auteur décrit cinq cas de sténose cicatricielle étendue de l'oesophage, traités durant ces deux dernières années par transposition rétrosternale d'une anse colique isolée. Dans 4 cas l'auteur a transplanté la moitié droite du colon et la portion terminale de l'iléon; dans 1 cas, le colon transverse avec l'angle splénique. La continuité du tractus intestinal a été rétablie dans 4 cas par une anastomose iléotransverse, dans 1 cas par une anastomose colo-colique de la portion ascendante avec la portion sigmoide du colon. Une extrémité de l'anse du colon a été implantée dans l'estomac dans 4 cas dans le sens du péristaltisme, dans 1 cas dans le sens contraire. L'autre extrémité a été amenée vers la région cervicale; dans 4 cas les malades ont été nourris par une iléostomie ou une colostomie (tube de caoutchouc introduit dans l'estomac durant les différents stades de la reconstruction). Lors d'un second temps, anastomose bout à bord de la portion cervicale disséquée de l'oesophage avec l'iléon ou le colon; troisième temps: fermeture de l'iléostomie. Tous les malades ont quitté l'hôpital dans un état fonctionnel satisfaisant, avec une augmentation de poids notable.

La transposition rétrosternale à travers le médiastin antérieur présente de nombreux avantages, tels que l'absence de complications pleurales et le fait qu'elle nécessite un fragment plus court de colon mobilisé que la transposition sous-cutanée. La remise en place de l'oesophage par le

colon droit est considérée comme la méthode de choix, en raison de la transposition iso-péristaltique. Les anomalies de l'artère colique droite peuvent éventuellement empêcher l'utilisation du colon droit; dans ce cas le transverse ou le colon gauche peuvent être transplantés, de préférence à l'intestin grêle.

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The noise of the mill is heard by *many*; the flour is seen by few.

Surgeons and the Rise of Anatomy

At first glance, the title "Surgeons and the Rise of Anatomy" simply appears to imply the following question: How did the rise of anatomy influence surgery? On closer analysis, however, this question leads to a set of other questions which must be answered before my subject becomes truly meaningful. These questions are: How could there have been any surgery before the rise of anatomy? Was there any earlier surgery? Why can we only now, in the fifth lecture on the history of surgery, talk about the rise of anatomy?

Some of the answers to these questions were inherent and explicit in the preceding lectures, others I must give to set the stage for the period and events with which I shall deal here.

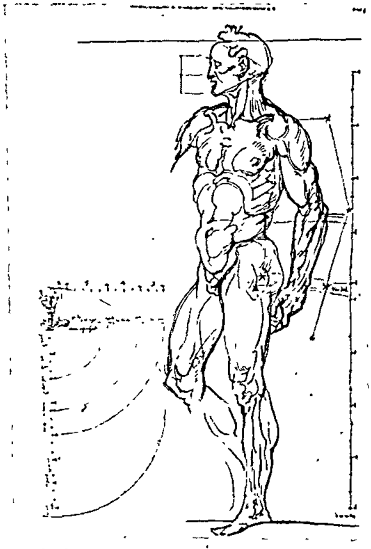
It is evident that some form of surgery has been practiced since the infancy of mankind. It is equally evident that most of this surgery related to wounds and accidents, that it was restricted to the setting of fractures, the application of splints, the reduction of dislocations and the closing of wounds. The methods for these operations were dictated by primitive logic and developed and perfected by practice. All the surgeon did was repair lesions; he did not produce new ones in the pursuit of his profession. It is perhaps true that many of these surgical manipulations might have been carried out more speedily or skillfully had the surgeon been consciously familiar with the structure of the human body. As it was, familiarity with the surface anatomy of the human body came with practice and experience, and things hidden were neither studied nor operated upon. It was obvious that not only the skill but even the incentive for more than restorative surgical intervention was lacking for many centuries. Surgeons and laymen alike realized early that wounds that penetrated the abdominal or the thoracic cavity or the head were almost invariably followed by death, and if we remember Dr. Zimmerman's lecture,* and his discussion of the Edwin Smith Surgical Papyrus, we are aware that when such wounds occurred, the surgeon would either decline to treat them, or, at best, adopt an expectant, noninterfering attitude. If surgeons were unwilling or unable to intervene in cases of internal injury, they were even less willing or able to cause internal injury in order to abolish pain, the origin of which was unknown to them.

In view of man's early interest in the study of man and in view of the early and inevitable development of a medical art, one must wonder why it was not natural for the physicians of antiquity to study the structure of the human body and why for two thousand years, with few exceptions, the healing arts—medicine and surgery — were practiced without knowledge of human anatomy.

Lecture given at the International Surgeons' Hall of Fame on Dec. 4, 1956, in the series offered by the School of the History of Surgery and Allied Sciences of the International College of Surgeons.

Bulletin, January, 1957.

It must be realized that in the early days of medicine there were two types of healer: the priest, whose ministrations called upon divine intervention, and the medical craftsman, whose interest was restricted to visible lesions, without concern for the causes of disease and the inner workings of the body. All questions related to hidden causes and hidden structures were considered philosophic rather than medical, and for centuries the medical man never arrogated unto himself the status of philosopher. It was only in the third century B.C. and for less than five hundred years that the transformation from craftsman to philosopher took place, but with the end of antiquity the physician, and particularly the surgeon, shed this uncomfortable garb of the philosopher and reverted to craftsmanship, while the priests resumed their function as supernatural healers.



Male figure after pen-and-ink sketch by Michelangelo, 1474-1564.

Curiously enough, the invasion of medicine by philosophy came by way of human anatomy, which, after the first century of our era, was condemned as the least philosophic and therefore the most neglected of all medical disciplines.

Until the time of Hellenistic, or Alexandrian, medicine, the study of human anatomy had not entered the realm of the Greek physician. The sculptures of Praxiteles reveal that the ancient Greeks were observant of the surface anatomy of the human body, but the study of internal anatomy had been left to chance observations, such as were offered by the occasional sight of a severely wounded gladiator, and was not pursued as a course of medical training. According to the views of the Hippocratic physician, further knowledge of the structure of the human body was not necessary, since it could be inferred from the study of animals.

The philosophers of the period went even further than the physicians in their analogic statements and arrived at conclusions that show a striking similarity to those of the early Chinese thinkers. Everything in the universe, they reasoned, was of the same composition as the universe itself; hence conclusions about the nature of the universe could be applied to all its creatures, and thus also to man. Aristotle challenged the principle of analogic deductions, stating that metaphors, while useful in poetry, were unsatisfactory as scientific theories.

Important as was the refusal of Aristotle and Theophrastus to make inferences from the structure of the animals and apply them to that of man, it was not by itself sufficient to help the Greeks overcome their inherent distaste for dissection of the cadaver, for until the fourth century B.C. the Greeks shared the belief of many ancient peoples that the human housed the soul and should remain inviolate even after death. In the 4th century B.C., however, Plato destroyed this belief. In his dialogue "Phaidon" the condemned Socrates comforts his friends about his death and burial and assures them that corpses are but images of the dead, and that the real self, the immortal soul, departs to the presence of the gods. Aristotle and, later, Epicurus adopted these Platonic theories, and a new general attitude toward life and death was thus created. Dissection of the human body ceased to be anathema to the philosopher, and thus the study of human anatomy became possible.

Unlike the earlier physicians of the Hippocratic period, the Hellenistic physicians were disciples of philosophers. The medical craftsman was replaced by the philosopher, because only as a philosopher could the physician achieve a new approach to the problem of a casual explanation of disease. The priest-healer took for granted the idea that disease was the expression of divine power; the medical craftsman followed the concept of disease as dysfunction of a mechanical law; but when the philosophers became practicing physicians they realized that disease was directly related to the structure of the human body. With the search for casual explanations, as expressed in the study of anatomy and physiology, the physician had become a scientist and thus a philosopher—for science formed the basis of philosophy.

Galen, who lived in the second century A.D. was the last to combine the art of medicine and surgery with the scientific search for the causes of disease and the study of anatomic structures.

Yet it was neither his brilliant philosophy nor his superb craftsmanship that commended Galen to posterity and helped him dominate the medicine of the Middle Ages. As Charles Singer has pointed out, the reverence shown to Galen by the medieval world is largely due to his teleologic beliefs. Galen's religion of teleology was based upon the Aristotelian principle that "Nature does nothing in vain." With this dictum Galen justified the form and structure of every organ in relation to the function for which he thought it designed. In doing this, he claimed that in every work of Creation—thus, also, in man's body—it was possible to demonstrate the Creator's design along known principles. To the Stoics of Galen's era, determinism in itself was neither novel nor strange. But Galen's determinism was a "determinism of perfection," in which everything was arranged by a wise and farseeing Creator and was, accordingly, perfect. Such beliefs naturally interfered with accurate description of the body and its functions and marred the scientific value of Galen's prodigious writings.

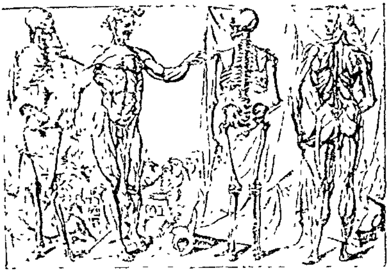
On the other hand, paradoxical as it may seem, complete scientific integrity might have doomed Galen to oblivion. From that he was saved by his religion, for his "determinism of perfection" and his belief in the supreme Creator fitted so completely into the philosophies of Christianity and Islam that his teachings could be taken over by the most devout adherents of both religions without any need for adaptation or change.

With Galen the end of Greek medicine arrived and the height of its achievement passed. The survival of Galen's works nevertheless insured a continuity of medical thinking, and it is hardly surprising that the earliest medieval physician appeared in the figure of a priest.

Although Galen's fame survived the Dark Ages and was never dimmed, not all of his writings shared their author's survival. Most of his anatomic treatises and his works concerning surgical experimentation were lost and had to be rediscovered during the Renaissance. The few of his works that did survive contained least of the essence of his searching mind. They were dogmatic rather than scientific and thus appealed to the dogmatic minds of the medieval scholastics. To doubt Galen was tantamount to heresy and to be avoided by all means.

It took a complete change of intellectual atmosphere like that brought about by the Renaissance to cut through the thick veil of adoration that surrounded the traditional authorities.

Of the cultural factors that brought about the Renaissance the most important, perhaps, was the recovery of the original texts of the classics. Medievalism had abundant versions of classical texts, but the authors were obscured rather than clarified by too many translators, commentators and glossaries. Another factor contributing to the rebirth of thought was the expansion of Europe, the widened horizons that were the results of the Columbian voyages and, more specifically for medicine, the importation of new and important drugs. Finally, it was the invention of printing in 1450 that made the cultural achievements of the Renaissance possible. The Renaissance, thought of as a rebirth of the thought of antiquity, was destined to go beyond the Greeks and to lay the foundation of modern thought and method, especially in medicine and the related sciences. New thought, however, could not easily be substituted for old beliefs, and fierce struggles occurred between those who strove for advance and those whose security lay in the *status quo*. The spirit of the Renaissance was expressed by Niccolo Leoniceno, one of the earliest botanists, who said, "Why has nature given us our eyes and other senses unless we may rely upon ourselves in the search of what is true?" This dictum could easily have applied to the Renaissance anatomists and surgeons, for they were among the first to deviate from tradition and to use their eyes and their senses to discover what was true.


Anatomic sketch of two skeletons and two muscle-men, after Rosso de Rossi, 1496-1541.

It is significant that the beginning of the study of human anatomy was made by one who was then and is now best known for his superb and unrivaled artistry. Leonardo da Vinci was a true humanist and a Renaissance personality in the most poignant sense of the term. His education combined philosophy with all other cultural subjects and medicine and the study of sciences with art. In his paintings his attention was often directed to the human body, and he felt that he could not do justice to the human body unless he understood it functionally and structurally. It was his plan, therefore, to write a textbook of anatomy; but, while many of his anatomic drawings have been preserved, they were less well known to his contemporaries than to us and of no influence on the anatomic thinking of his day. His textbook of anatomy was never published.

The real father of modern anatomy was Andreas Vesalius, who lived from 1514 to 1564. He was a Belgian from Wesel, from which he derived his name, and studied medicine at Louvain in Belgium and afterward in Paris. In both places he found the instruction utterly conservative and entirely based on Galen's anatomic texts.

Having dissected animals for his own enlightenment from his early youth, Vesalius became violently dissatisfied with the teaching of anatomy to which he was exposed, and in Paris he even went so far as to rush to a cadaver in the middle of an anatomic lecture and to take over the dissecting and demonstrating himself. This mutiny led to bitter quarrels with his teachers, and having obtained his degree he went to Italy and settled at Padua in 1537. At the age of 23 he was made Professor of Anatomy and immediately began instituting sweeping reforms. In contrast to the modern scholar who migrates to another country. Vesalius had no linguistic difficulties. The academic language was Latin, of which he, like all of his colleagues and students in every country, had fluent command. By untiring labor for five years he completed and printed his great work. At 28 he was the author of *De Fabrica Corporis Humani*, "On the Fabric of the Human Body," which was the first great modern work of science and the foundation stone of modern biology.

Vesalius deals with living anatomy, *anatomia animata*, and he fits the part under description into the living whole. Vesalius' figures are rarely diagramatic; they usually present parts of the body as in a living model. They are doubtless artistically far superior to modern anatomic representations. As the title of the book implies, Vesalius always saw the body as a fabric, that is, as a piece of workmanship fashioned by the Creator himself. Thus the muscles are shown as in living man. The modern biologist thinks of the origin of things and beings in terms of evolution. Vesalius thought of the need for which things and beings are made. He had revolted against Galen's thoughts and ideas, but like Galen, he thought that man was a work of art and God the artist.

Vesalius' "Fabric of the Human Body," published in 1543, opens with a description of bones and joints. The first bone considered is the skull. He describes the different shapes of the skull in the manner of the modern anthropologist. His most successful studies are concerned with the muscles. The drawings depicting the muscles are superior in certain aspects to most modern anatomic figures. Vesalius succeeded in showing muscles with a normal degree of contraction, for he represented living figures as though the skin were transparent.

The studies in which Vesalius proved himself as the greatest innovator, and in which he deviated completely from preceding thought, were his studies of the heart. It had been Galen's assumption that the presence of blood in both chambers of the heart could only be accounted for by assuming the existence of invisible pores in the septum of the heart. This belief had been implicitly shared by all subsequent teachers of medicine. Vesalius, in his various studies of animal and human hearts, was deeply puzzled. He was unable to find these pores, and he found the septum as dense and compact as the rest of the heart. In the first edition of his book in 1543 he expressed his puzzlement by stating,

> "The septum is formed from the very densest substance of the heart. It abounds on both sides with pits. Of these, none, so far as the senses can perceive, penetrate from the right to the left ventricle. We wonder at the art of the Creator which causes blood to pass from right to left ventricle through invisible pores."

This shows that Vesalius had begun to doubt Galen.

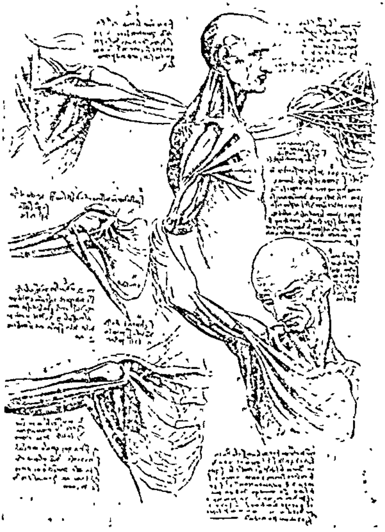
Twelve years later Vesalius brought out a second edition of his great work. Again he examined parts of the septum. He says, more strongly,

> "Not long ago I would not have dared *to turn aside even a hair's breadth* from Galen. But it seems to me that the septum of the heart is as thick, dense and compact as the rest of the heart. I do not see, therefore, how even the *smallest particle can* be transferred from the right to the left ventricle through the septum."

In addition to the "Fabrica," Vesalius was the author of several other works, all of which were written before he was in his early thirties. After this tremendous spurt of creative energy, however, his personal life came to a disappointing close. Little is known about his later though still youthful years. He left Padua under a cloud of persecution, having been accused of performing anatomic studies on living bodies. Much of this animosity was really occasioned by his controversial anatomic observations. From Padua he went to Spain to become the personal physician of Charles V, spending his last years in the quiet and obscurity of the Spanish court. He died on a voyage to Jerusalem of unexplained causes. The reason for his trip to the Holy Land is likewise unknown.

If we were to characterize the personalities that led to the flowering of surgery in the Renaissance we should, of course, begin with Vesalius, whom we would describe as the Observer. Vesalius, as we have seen, recorded his observations and brought out his new insight, which differed so much from that of earlier scientists, but on the whole he was content to observe and to record; he was unwilling to fight for the truths he had discovered. It took another personality who loudly and continuously voiced his criticism of unquestioning adherence to tradition and consequently brought upon himself the wrath of his medical contemporaries. This man, the Critic, was Paracelsus, also known as Philippus Aureolus Theophrastus *Bombastus von Hohenheim.* He was born in 1493 and died in 1542, two years before Vesalius published his "Fabrica."

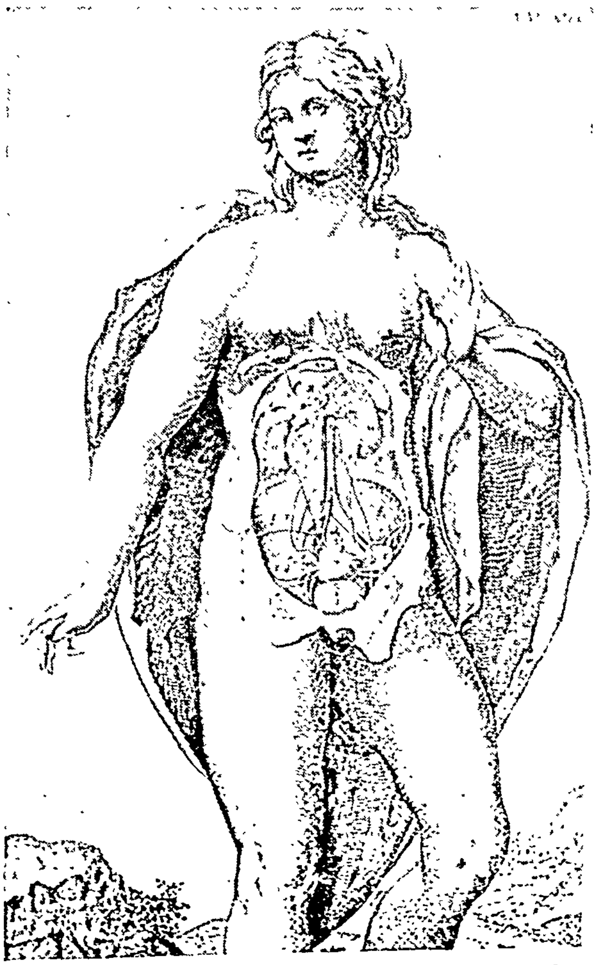
Like many of the Renaissance personalities, Paracelsus was a man of wide *general education and many interests,* which included the entire realm of medicine, chemistry and surgery. Although his surgical writings were fewer than those in other fields, they were incisive and important because they aimed to do away with many of the ancient prejudices. Paracelsus was a learned man, but he was born in the rough mountains of Switzerland, and much of his work reflects his native surroundings more than the academic atmosphere in which he studied later but never felt entirely at home. He disdained the use of Latin, although he knew it, and was the first to use German



Anatomical drawings by Leonardo da Vinci, 1510.

for scientific writings. The German he used was rough and often uncouth, but it was emphatic and incisive and assured of great impact. Paracelsus collected his information not only from the lecture podium of the great professors but from barber-surgeons, bathhouse keepers and old wise women who collected herbs in the countryside. It is obvious from his writings that he, like his predecessors, was concerned mainly with the treatment of wounds rather than the practice of surgery in the modern sense of the word; but, it was in the treatment of wounds that he tried to introduce enormously important innovations.

Some of these innovations may appear to us like pure superstition and may have been born of superstition on Paracelsus' part. Still, their effect was destined to relieve a great deal of suffering. One of these innovations was the use of "weapon ointment." This ointment, which formerly had been applied to the wounds directly, was a concoction of weird and often unappetizing substances, retarding healing rather than promoting it, and often bringing about additional infection. It was Paracelsus' theory that if this ointment were to be applied to the weapon that had inflicted the wound rather than to the wound itself, healing would proceed at a faster rate, and one must admit that, while his theory may have been entirely wrong, his observation was certainly correct. Paracelsus furthermore violently opposed "the damnable precept which teaches that it is neccessary to make wounds suppurate." This was directed to the vast number of medieval and even Renaissance surgeons who had believed in "the laudable pus" or the healing "by second intention." Paracelsus' insistence on the cleanliness of wounds is found in various declarations that were truly revolutionary. Like Hippocrates he said, "In wounds nature is the real physician. All that is necessary is to prevent infection in wound diseases. The humors and complexion, diet, weather, and the stars have no influence. Only the proper treatment, that which lets nature act in peace, determines the result."

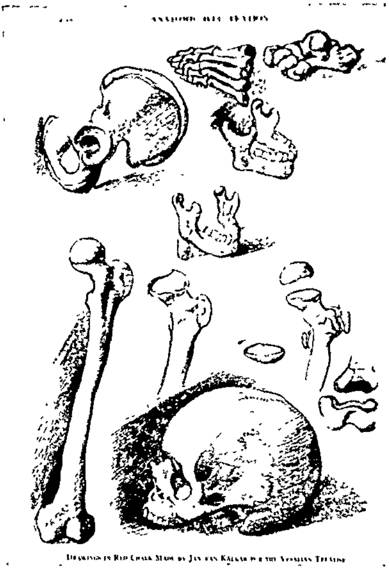


Eviscerated female figure made by Fialetti for the Italian Anatomist Giulio Casserio (1561-1616).

In the age of scholastic reasoning, of academic refinement and of the gentility of Latin phraseology, Paracelsus' course of unconcealed attack on his colleagues led to his defamation and persecution. The consequence was that his eminent medical colleagues saw to it that his books were not published and his dicta not respected. Nevertheless his message seeped through the curtain that was drawn around him and slowly became known among the people.

The experiences of Paracelsus, the Critic, and of Vesalius, the Observer, helped to instil caution into the third great figure of Renaissance surgery, Ambroise Paré. Paré, the Experimenter, was born in 1510 and died in 1590. He was entirely different from the two other medicosurgical heroes of the Renaissance. Vesalius and Paracelsus were well educated: Vesalius had laboriously demonstrated that Galen's facts were false. Paracelsus had rebelled against tradition and attacked Galen with violence. Paré was not educated. His incentive was not rebellion, it was not even the conscious desire for scientific observation, it was compassion for those who suffered. He was born in 1510 and had been apprenticed as a boy to a barber. During his apprenticeship he clipped the hair of his clients, he shaved and bled them, he pulled their teeth and dressed their wounds, and with all these ministrations he felt more and more attracted to surgery. In order to learn more about surgery, he went to the Hôtel Dieu (Hospital of God), which is still a place of refuge for those for whom society does not make other provisions. In Paré's days it was a dirty and totally neglected place, and the nursing staff, composed of sisters of charity, was entirely untrained. Each bed was occupied by several patients, and the operating room was in the corner of the vestibule. It was here that Paré received the beginnings of his surgical education.

In 1536 the war, which had helped Vesalius in his decision to leave Paris, called Paré into the Army. He became a regimental surgeon, and while the French laid siege to Turin Paré saw with helpless compassion how badly mutilated and wounded soldiers whom he could not help were relieved of their suffering by being shot by an old soldier. In the course of this campaign, which reached Milan, Paré introduced his first great innovations concerning the treatment of gunshot wounds. Gunshot wounds were the new features of warfare, as fearful and awesome as the newest weapons appear to us now.


Drawings in Red Chalk Made by Jan van Kalkar for the Vesalius Treatise

From *De Corporis Humani Fabrica*, 1543, by Andreas Vesalius.

Gunpowder had been invented in 1320 by Berthold Schwartz and guns and cannons were in general use in the fifteenth century. In the sixteenth century muzzle-loading arquebuses had been developed, which emitted balls of the size of a walnut and inflicted horrible wounds. The earlier weapons, swords, lances, and battle axes, had made clear, open wounds that were usually but slightly infected, but the gunshot wounds were deep and narrow; they usually contained bits of clothes and filth and led to severe infections.

Somewhat earlier Giovanni de Vigo, a

for scientific writings. The German he used was rough and often uncouth, but it was emphatic and incisive and assured of great impact. Paracelsus collected his information not only from the lecture podium of the great professors but from barber-surgeons, bathhouse keepers and old wise women who collected herbs in the countryside. It is obvious from his writings that he, like his predecessors, was concerned mainly with the treatment of wounds rather than the practice of surgery in the modern sense of the word; but, it was in the treatment of wounds that he tried to introduce enormously important innovations.

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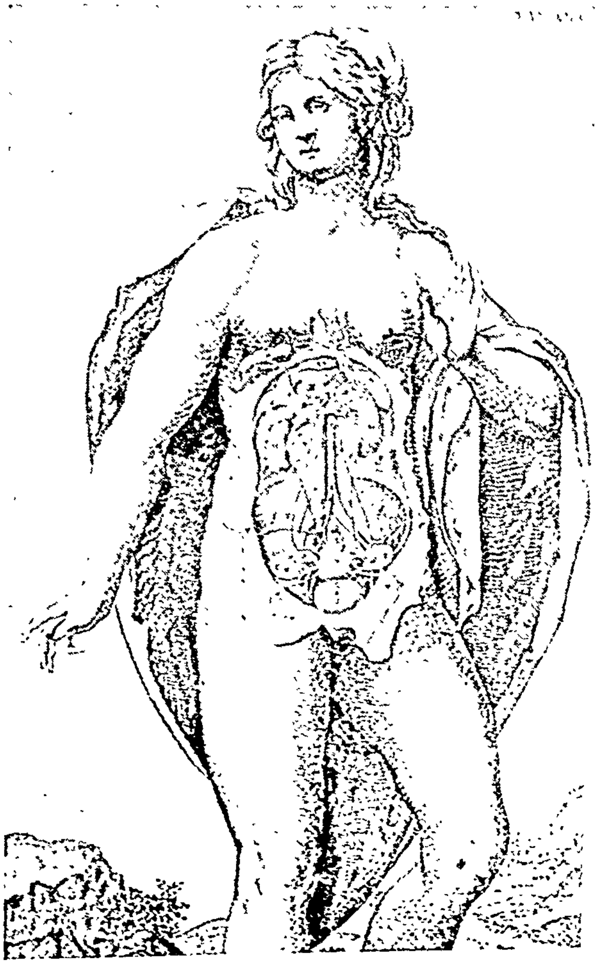

Eviscerated female figure made by Fialetti for the Italian Anatomist Giulio Casserio (1561-1616).

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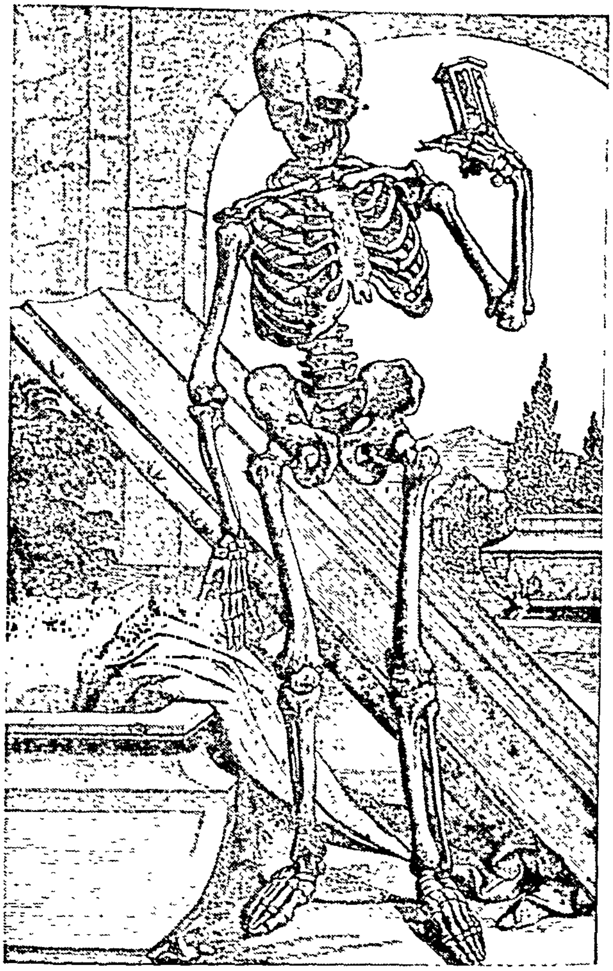
vented a number of prostheses: artificial eyes, and arms and legs which even had a mechanism to bring about their movement. He recommended and practiced postoperative massage and implanted teeth, which were taken from paid living donors.

It is interesting that this theory of the possibility of implanting teeth taken from donors persisted for several centuries after Paré. Even John Hunter practiced this method and wrote on it, expressing his complete conviction that teeth thus grafted would take root and be usable in their new environment. Altogether, most of Paré's inventions entered surgical practice sooner or later. Their impact was not as immediate as was to be expected, because of Paré's humble origin and the fact that he did not belong to the "inner circle" of scholars, but it is entirely owing to Paré that surgery became a skilled craft. Paré based his surgical operations on the anatomic writings of Vesalius and was thus the first surgeon to relate surgery to anatomy. Significantly, Paré had to keep his reliance on Vesalius' works a secret as long as Sylvius, Vesalius' teacher, was alive in Paris. Paré's position in the hierarchy of medicine was too uncertain for him to admit his spiritual fellowship with one who had disproved Galen. With the death of Sylvius this caution was no longer needed, and Paré's later writings rely openly on the works of Vesalius.

Paré's surgery remained the preferred mode of surgery for two hundred years, that is, until the arrival of the great surgical scientists of the eighteenth and nineteenth centuries. It took John Hunter to turn surgery into a science, Joseph Lister to introduce antisepsis to prevent infection, and the Americans, Long, Wells, and Morton, to provide the blessings of anesthesia and to abolish pain in operations. As was said earlier, Paré raised surgery from a trade followed by menials to a skilled craft carried out by trained men. After Paré's time, surgery became more and more a part of medical education, and the distinction between the "surgeons of the long robe" and the "surgeons of the short robe" was broken down. Surgery and the surgeon had become respectable.

Throughout his writings one cannot help to be impressed by Paré's gentleness and humility. Over and over again he stated his credo concerning his success with every one of his patients. "I dressed his wounds—God healed him," is his recurring summary of each recovery. His accidental use of the controlled experiment led him to perform others and to be inclined toward experimentation in general. Thus, when once called to treat a man whose face had been badly burned, Paré decided to try out a remedy of which he

Anatomic plate from the works of Pietro Berrettini's *Tabulae Anatomicae*, Rome, 1741.



The Skeleton, from Godfried Bidloo's *Anatomia Humani Corporis*, Amsterdam, 1685.

leading scholarly writer on surgery and a physician to Pope Julius II, had stated categorically that gunshot wounds were poisoned with gunpowder. He recommended that, at the first dressing of these wounds, boiling hot oil be poured into the wounds in order to counteract the poisoning. Ambroise Paré was, of course, familiar with Giovanni de Vigo's writings and had without much hesitation followed the practice of using boiling oil. His implicit belief in this method was shattered after the experiences of his first major battle. While dressing the wounded, of whom there were many more than had been anticipated, he ran out of boiling oil and had to leave one-half of the wounded untreated. After a sleepless night during which he envisaged those untreated already dead or dying of their poisoning, he found a totally unexpected result. While those who had been treated with oil were feverish and in severe pain, and showed considerable swelling, he found the untreated ones on the way to recovery. Although it happened accidentally, this experience turned out to be the first controlled experiment in medical history. Paré himself recognized its value and repeated it later when trying out other innovations. In relation to the treatment with boiling oil, he implicitly believed in the evidence that presented itself to him and he stated; "Then I resolved with myself never more to burn thus cruelly poor men wounded with a gunshot." The fact that he trusted his own observation and reasoning and that he was immediately able to disregard authority and tradition is one of the indications of his great personality.

In 1545, after the conclusion of the Peace of Crespy, Paré returned to Paris and from then on alternated between private practice and military surgery. He also began his career as a medical writer. His first publication was "On the Treatment of Wounds of Firearms." This, like all his subsequent writings, was a practical textbook for surgeons. It did not theorize and was generally comprehensible, even to the less learned, because it was written in French.

Paré developed a number of new surgical methods. He introduced the ligature to be used instead of cautery with red hot irons in the control of hemorrhage following amputation. In antiquity the practice of ligature had been so well known that Galen had pointed out the shops where ligature materials of the best quality could be bought. The type of ligature used in modern surgery is directly derived from Paré. He was immensely skillful and in-

vented a number of prostheses: artificial eyes, and arms and legs which even had a mechanism to bring about their movement. He recommended and practiced postoperative massage and implanted teeth, which were taken from paid living donors.

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Anatomic plate from the works of Pietro Berrettini's *Tabulae Anatomicae*, Rome, 1741.

had heard through a camp-following old woman. She had recommended an application of chopped onions instead of the ointment that was generally used. In order to test this new remedy, he covered one half of the face of the burned man with the usual dressing and the other half with onion paste. Only when he found that the latter produced a more rapid cure did he use it altogether. Another experiment concerned the bezoar, which had been considered a theriac against poisoning since the earliest days of healing. The bezoar, selling for exorbitant prices and freely dispensed to many patients, was a stone-like ball consisting of hair and other matter which had been excreted by a goat or found in its stomach after its death. Paré gave portions of such stones to poisoned condemned prisoners, but soon found that the stone's value was purely mythical.

—ILZA VEITH, M.A., PH.D.

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There are men who have made a business of abusing the sciences and, although they would not confess it themselves, their aim nevertheless is simply to display their own knowledge. But it seems to me that it is the aim and function of an intelligent mind to make new discoveries in whatever field such investigations may be useful, and also to bring to completion tasks that are but half-finished. On the other hand, a desire to belittle by abuse the scientific discoveries of others and to slander the discoveries of the learned to the illiterate, rather than to offer constructive criticism, is not so much the aim and function of an intelligent mind, as a proof of warped character and want of skill. Those who have the ambition to be scientists but not the necessary ability are equipped for the malicious habit of slandering their neighbors' work if it be right, or of censuring it if it be wrong. In other sciences, let those who can stop their enemies, each in his own subject. This thesis aims at answering the opponents of the science of medicine with a boldness to condemn based upon a sound knowledge of the subject it defends and upon the strength of trained judgment.

It appears to me that there is no science which has no basis in fact. It would be absurd to suppose something that exists non-existent. For what property of a non-existent thing could anyone point to as a proof of its existence?

—*Hippocrates*

A group of pupils of the late master, therefore, has undertaken complete revision of the book. They have conserved his general plan, although certain chapters have been modified or recast and entirely new ones inserted to deal with all the new findings. The novel therapeutic applications by endo-rectal ways have been specified, particularly contact radiotherapy. The chapter on blood dyscrasias is completely new and has never before been published.

To the magnificent iconographic emplementation of the old edition have been added forty new aquarelles, taken from Bensaude's collection as well as from those of the editors. The number of pictures in black has been notably increased: radiologic aspects shown, as are the photographs of surgical pieces, specimens, histologic sections and endoscopic observations.

The 39 color plates, if published separately, would make a magnificent atlas in themselves. This collection is indispensable to every gastroenterologist, and it is particularly valuable for teaching purposes. The legends stand opposite each plate and are presented in French, English, Spanish, German, Italian and Portuguese.

M. T.

Gynecologic Therapy. By William Bickers. Springfield, Ill.: Charles C Thomas, Publisher, 1957. Pp. 158.

In spite of its title, this book presents clinical diagnosis as well as therapy. Surprisingly, there is no foreword or preface, and there are no illustrations. According to the advertising on the jacket, the book was written as a manual for senior medical students, residents and young general practitioners. The treatment recommended was chosen from the work of leading gynecologists as well as from the author's experience. The subjects covered are the vulva and introitus, the vagina, the cervix, the corpus, the fallopian tubes, the ovary, menstrual irregularities, dysmenorrhea and premenstrual tension, endometriosis, sterility, abortion, ectopic pregnancy, hydatidiform mole and chorionepithelioma, leukorrhea, hirsutism and intersexuality, and menopause and climacteric.

This book can be definitely recommended to the young men and women for whom it was written, because it contains authoritative information and advice based on the writings of leading gynecologists and the author's extensive personal experience as a practicing gynecologist, teacher and investigator.

J. P. GREENHILL, M.D.

Synopsis of Pathology. By W. A. D. Anderson. St. Louis: The C. V. Mosby Company, 1957, 4th ed. Pp. 829, with 328 illustrations and 12 color plates.

The fourth edition of this well known book follows, in its outline, the previous edition. As is to be expected from a scholar like Dr. Anderson, every chapter has been revised to keep in step with the latest knowledge in the field of pathology.

Considering the difficulties of condensing the tremendous field of pathology into a small synopsis, the reviewer must admire the result of the author's work. Needless to say, this synopsis is not intended to replace textbooks for students, but in the reviewer's opinion it represents a complete summary of the important features in general and special pathology.

The book is a "must" in the library of every pathologist and would be a valuable addition to that also of every physician interested in the basic principles of medicine.

WERNER F. EISENSTAEDT, M.D.

The Treatment of Fractures. By Lorenz Böhler. New York and London: Grune & Stratton, Inc., 1957. 5th ed., vol. 2. Pp. 435, with 941 illustrations.

Volume 2 of the fifth edition of this impressive set of reference books, dealing with fractures and other injuries of the spine and extremities, was translated from the thirteenth German edition by Otto Russe, M. D., Director of the Accident Hospital of Vienna, where most of Böhler's work has been carried on for many years, and by R. G. B. Bjornson, M. D., who is listed as a Diplomate of the American Board of Radiology.

This book is devoted entirely to the diagnosis and treatment of fractures or disloca-

Chirurgie Orthopedique des Paralysies (Orthopedic Surgery of the Paralyses). By R. Merle D'Aubigne, J. Benassy and J. O. Ramadier. Paris: Masson et Cie, 1957. Pp. 431, with 171 illustrations.

The senior author of this reference book dealing with the orthopedic treatment of paralysis, Prof. R. Merle D'Aubigne of the Clinic of Orthopaedic Surgery of the Faculty of Medicine of Paris, is well known among the orthopedic surgeons of the United States. His judgment is much respected, and his ability and skill as a surgeon are admired by all who know him. With his collaborators, D'Aubigne has presented in this volume the methods and technics of diagnosing and treating each of the various types of paralysis of the spine or extremities.

Section 1 begins appropriately with a description of direct injuries of the peripheral nerves. The methods of suturing the injured nerves are shown; the indications for repair of the various nerves are outlined, and the results of suture of each of the more commonly injured nerves are presented in a study of the end results in a large series of cases. Special mention must be made of the section of the book that deals with injuries of the nerves that supply the muscles controlling movements of the hand. Both palliative and operative treatments are described. In addition to commonly recognized or standardized technics, many original modifications are described by the authors.

Section 2 consists of a section on painful neurovascular lesions or causalgias treated by sympathectomy. Section 3 describes the treatment of the traumatic paraplegias, including both conservative and surgical management. Section 4 recommends a program for the treatment of hemiplegia, and Section 5 presents both the nonoperative and the operative treatment of patients with cerebral palsy. Section 6 includes the treatment of the patient paralyzed from acute anterior poliomyelitis. The last chapter of the book describes clearly, but without being tiresome or tedious, electrodiagnosis of lesions of the peripheral nerves and their treatment by physiotherapy.

This is a reference book rather than a textbook. It should be available to those surgeons who are responsible for the diagnosis or the definitive treatment of paralysis of the extremities.

EDWARD L. COMPERE, M.D.

Lesions of the Cervical Intervertebral Disk. By Michael E. DeBakey, R. Glen Spurling and Barnes Woodhall. Springfield, Ill.: Charles C Thomas, Publisher. Pp. 134, with 41 illustrations.

This monograph has been carefully written and is subdivided into seven chapters, of which the second, on anatomic considerations, is especially good.

The third chapter covers the pathogenesis, the fourth discusses clinical diagnosis, the fifth chapter deals with roentgen diagnosis, and the sixth discusses the management of the various problems previously mentioned.

An excellent index and a comprehensive list of references are included. These should be helpful to anyone interested in this problem. The book should be read by all neurosurgeons and orthopedic surgeons.

H. E. TURNER, M.D.

Rectoscopy, Sigmoidoscopy. By R. Bensaude. Revised and edited by P. Hillemand, R. Cattan, A. Lambling and A. Bensaude. Paris: Masson et Cie, 1957.

The second edition of *Textbook on Rectoscopy* by R. Bensaude, which appeared in 1926, long has been exhausted. During the past thirty years many aspects of rectal pathology have changed considerable; some of them are completely modified: maladies formerly frequent have now become rare; rare maladies are better understood; novel treatments have been perfected.

Yet no comprehensive book, either within or without France, has been devoted to recto-sigmoid endoscopy.

Abstracts from Current Literature

Primary Malignant Neoplasms of the Duodenum. Ochsner, S., and Kleckner, M. S. Jr., J.A.M.A. 163:418, 1957.

Only radiologic diagnosis can provide early enough recognition of tumors involving the duodenum to allow resection of the lesion. While the radiologist must be particularly alert to the less common lesions of the alimentary tract, he must be equally aware of the factors that may obscure the lesions during the examination.

Of 17 duodenal lesions observed at the Ochsner Clinic, 14 were diagnosed as adenocarcinoma and 3 as sarcoma.

The tumors were classified into suprapapillary, peripapillary, and infrapapillary types, each of which has rather characteristic clinical manifestations.

Prompt surgical exploration and excision or palliative procedures should be carried out.

William E. North, M.D.

Pulmonary Cystic Disease: Physiologic Studies and Results of Resection. Siebens, A. A.; Grant, A. R.; Kent, D. C.; Klopstock, R., and Cinotti, J. J., J. Thoracic Surg. 33: 185, 1957.

Pulmonary cystic disease is discussed from the standpoint of interpretation of pulmonary functional tests, variability in physiologic deficit and end results of excisional therapy. Six cases are reported in detail. No characteristic abnormality accompanies pulmonary cystic disease. Large cysts may produce minimal or extensive physiologic deficits. The patency of the communication, the index of alveolar mixing and the degree of compression of the surrounding normal lung are important factors in determining the ultimate prognosis. Excisional therapy of the cysts produces excellent results from both the symptomatic and the physiologic point of view.

Ernest G. DeBakey, M.D.

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Proctosigmoidoscopic study was accomplished in 50,000 cases, with 1 instance only of perforation, by observing these precautions: digital examination of the rectum before inserting the instrument, blind insertion of the instrument only as far as the finger had explored, infrequent use of air inflation, special care in passing diseased segments, and care not to push the instrument forcibly against the intestinal wall until the lumen ahead had been identified. All subjects were asymptomatic and between the ages of 20 and 76. Polyps were observed in 3,952 cases. Of these, 328 were malignant. In addition, 19 instances of moderately advanced rectal carcinoma were noted.

Digital examination and proctosigmoidoscopic study are effective in the early detection of malignant neoplasm. The early removal of rectal polyps will prevent many carcinomas of the colon.

William E. North, M.D.

tions of the hip and fractures of the shaft of the femur. In addition to a number of line drawings and abundant reproductions of roentgenograms, there are many photographs of the animation type, showing the patient in various positions to indicate the restoration of joint function after injuries of the femoral neck and shaft.

The treatment described includes internal fixation by various technics. The complications that may result from the injuries to the hip or the shaft of the femur are presented most effectively. Chapter 52 is devoted to the subject of the management of gunshot wounds of the hip joint, and the final chapter in the book describes the treatment recommended for both recent and old or infected gunshot wounds of the shaft of the femur.

Probably no one in the world has had a more varied or extensive experience in the treatment of various types of fractures than has Lorenz Böhler. The methods he recommends are those which have proved most successful when carried out by Böhler or under his own supervision. Although many who read the book will disagree with some of his recommendations, no orthopedic or industrial surgeon who is called upon to treat fractures and dislocations of the femur will wish to be without this reference book.

EDWARD L. COMPERE, M.D.

L'Hemorrhagie Cerebrale (Cerebral Hemorrhage). By Guy Lazorthes. Paris: Masson et Cie, 1956. Pp. 112, with 26 illustrations.

This study is based on the author's experience with 45 spontaneous (nontraumatic) cerebral hematomas. In 17 patients the hematoma was considered due to hypertension, in 2 to endocarditis, in 1 to lood dyscrasia, in 5 to aneurysm, in 5 to angioma and in 15 to an undetermined cause. Thirty-five of the patients have been seen in the past five years. All but 1 of these were operated on, with only 6 deaths (15 per cent). The essential details of these 35 cases are presented in tabular form.

The location was parieto-occipital in 26 of the 35 patients; frontal in 3; temporal in 2, and deep or capsular in 4.

Angiographic study is considered to be the diagnostic procedure of choice.

Operation is best carried out toward the end of the first week. Craniotomy with incision of the cortex and evacuation of the clot under direct vision is the preferred procedure.

The literature is thoroughly reviewed and an extensive bibliography appended. The therapeutic emphasis is on surgical removal of the hematoma but medical management, especially induced hypotension and hypothermia, is not neglected.

HAROLD C. VORIS, M.D.

◆

> The most important thing in a work of art is that it should have a kind of focus, i.e. there should be some place where all the rays meet or from which they issue. And this focus must not be able to be completely explained in words. This indeed is one of the significant facts about a true work of art—that its content in its entirety can be expressed only by itself.
>
> A really remarkable and powerful mind can look for a method of expressing his idea, and if the idea is strong he will find new methods of expressing it. But modern artists invent a technical method and then are on the lookout for an idea, which they arbitrarily squeeze into their method.
>
> —*Tolstoy*

Abstracts from Current Literature

Primary Malignant Neoplasms of the Duodenum. Ochsner, S., and Kleckner, M. S. Jr., J.A.M.A. 163:413, 1957.

Only radiologic diagnosis can provide early enough recognition of tumors involving the duodenum to allow resection of the lesion. While the radiologist must be particularly alert to the less common lesions of the alimentary tract, he must be equally aware of the factors that may obscure the lesions during the examination.

Of 17 duodenal lesions observed at the Ochsner Clinic, 14 were diagnosed as adenocarcinoma and 3 as sarcoma.

The tumors were classified into suprapapillary, peripapillary, and infrapapillary types, each of which has rather characteristic clinical manifestations.

Prompt surgical exploration and excision or palliative procedures should be carried out.

William E. North, M.D.

Pulmonary Cystic Disease: Physiologic Studies and Results of Resection. Siebens, A. A.; Grant, A. R.; Kent, D. C.; Klopstock, R., and Cinotti, J. J., J. Thoracic Surg. 33: 185, 1957.

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William E. North, M.D.

IMPORTANT ANNOUNCEMENT

Contributors of scientific articles for publication in The Journal of the International College of Surgeons from Europe, the Near East and the Middle East should send their articles to:

European Office of the
International College of Surgeons
6-8 Rue de la Confederation
Geneva, Switzerland

A special committee has been appointed to evaluate the papers submitted for publication. The Journal publishes summaries in English, French, German, Spanish, Italian and Portuguese. Summaries of articles should be included in as many of these languages as possible.

AVIS IMPORTANT

Les auteurs d'articles scientifiques destinés à être publiés dans le Journal du Collège international de chirurgiens sont priés d'adresser leurs articles à l'adresse suivante pour l'Europe, le Proche et le Moyen Orient.

Bureau Européen du
Collège international de chirurgiens
6-8 rue de la Confédération
Genéve (Suisse)

Un comité a été nommé pour l'examen des articles à paraître. Les auteurs sont priés de joindre à leur travail de brefs résumés en français, anglais, allemand, espagnol, italien et portugais si possible.

CATARACT SURGERY

BY

ROBERT H. G. MONNINGER, M.S., M.D.

EVANSTON, ILLINOIS

The delineations of the technique of intracapsular lens extraction as discussed in Arruga's textbook of Ocular Surgery are many ranging from the method of akinesia and anesthesia to the stages of operation and instruments used. This article will describe in general Arruga's method of cataract surgery.

Anesthesia is effected by topical instillation of 3% cocaine, or a derivative, and 1:1000 adrenalin, combined with a 1 cc. retrobulbar injection of 2% novocain, or a derivative, made through the lower lid or through the conjunctiva with the lower lid pulled downward. The Van Lint-Rochat technique for akinesis of the orbicularis muscle is employed using a mixture of 2% novocain and adrenalin. A blepharostat is used to retract the lids, and a canthotomy may be performed to further widen the lid opening. A suture is passed through the tendon of the superior rectus muscle and held by an assistant to fixate the globe. The conjunctiva and episclera of the lower hemisphere are held with fixation forceps preparatory to making the corneal section. Using a Graefe knife the puncture is made in the maximal horizontal diameter and 1 mm. from the conjunctival limbus, and the counter-puncture is made on the opposite side 1 mm. from the corneal limbus. The section is then continued in the limbus, inclining the blade upward or backward depending on whether the intent is to complete the cut in the cornea, or to leave a conjunctival flap. A central suture is placed, passing through limbal conjunctiva and the posterior edge of the section, or through the center of both lips of the wound. A knot is made and the suture is left slack. A peripheral iridectomy, or two iridotomies, one on each side of the central suture, is performed by having the assistant raise the cornea while the surgeon grasps the root of the iris with an iris forceps and cuts it with a de Wecker scissors. If blood appears in the anterior chamber, it is removed by cannula irrigation. A cataract hook is held in one hand and placed in the lower cul-de-sac while the closed lens forcep is introduced into the wound and passed across the pupil to lie on the anterior-inferior surface of the lens below the iris. The forceps is lifted and opened 4 mm. and the lens is pressed backward slightly. The forceps is closed and the lens is pulled toward the pupil and rocked from side to side. After the lens is freed inferiorly, the hook is placed at the lower limbus and moved toward the wound opening while the forceps rotation is continued. The lens is expelled, its lower surface clearing the posterior surface of the cornea and emerging first. This is the tumbling technique. The iris is replaced with a spatula and the wound suture is tied. Two more sutures are placed, one on each side of the central suture. Antiseptic and miotic ointments are instilled, and a dressing is applied with a protective device over this, and held in place with an adhesive substance.

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EDITORIAL REQUIREMENTS. — The *Journal of the International College of Surgeons* does not limit publication of scientific material to Members and Fellows of the College. Original articles of scientific value are invited from all surgeons, but they will be accepted only with the understanding that they are contributed solely to the *Journal.* Nothing that appears in the *Journal* may be reprinted, either wholly or in part, without permission, except for scientific reference purposes. The *Journal* is published under the supervision of the Publication Committee, who reserve the right to reject any material not deemed suitable for publication. The editors accept no responsibility for the opinions expressed by contributors; signed *editorials* are the opinions of the writer and do not necessarily reflect the views of the Officers of the College. No responsibility is assumed for the return of unsolicited manuscripts.

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Bibliographic references should follow the style of the Quarterly Cumulative Index Medicus of the American Medical Association. All tables, charts and illustrations should be *loose, not attached to pages of text material.*

ILLUSTRATIONS.—Photographic prints should be large, clear, on glossy paper and preferably mounted. Drawings and charts should be in india ink on white paper, without pencil shading. Negative prints of roentgenograms are preferred. All illustrations should be numbered and the top indicated. Each set should be accompanied by legends numbered to correspond *but on separate sheets.* Points to be emphasized should be clearly indicated for the benefit of the engraver.

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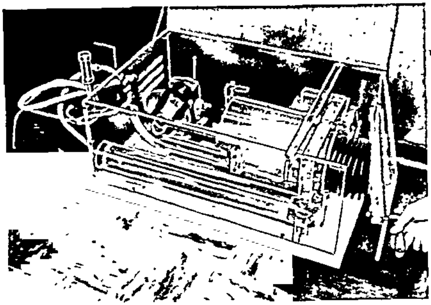

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FOUNDED BY DR. ANDRE' CROTTI

Section II

Vol. XXVII No. 4

May-June, 1957

Editor-in-Chief	Max Thorek, M.D., Sc.D., LL.D., F.B.C.S. (Hon.), F.I.C.S. (Hon.), F.P.C.S. (Hon.), F.R.S.M. (Eng.)
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Prof. Dr. Carlos Gama, F.I.C.S. (Hon.), President of the International College of Surgeons and newly appointed Secretary of Health and Social Assistance for the State of São Paulo, Brazil.

High Honors to Prof. Carlos Gama

President, International College of Surgeons

To the long list of awards and distinctions earned by **Prof. Dr. Carlos Gama, F.I.C.S.**, President of the International College of Surgeons, has been added still another, his appointment as Secretary of Health and Social Assistance of the State of São Paulo. The appointment was made by **Governor Janio Quadros** and was formally accepted by Prof. Gama on March 28 at the Secretariat headquarters, in the presence of many State dignitaries gathered to do him honor.

The State Secretary of Justice, **Dr. Lincoln Feliciano**, delivered the opening address and presided over the ceremonies that followed. The retiring Secretary of Health and Social Assistance, **Dr. Coutinho Cavalcanti**, then formally released the office to Prof. Gama, who expressed his appreciation in a brief but moving address.

"As I assume the responsibilities of the Secretary of Health and Social Assistance," he said, "I arrive at an extremely important point, not only in my own career but in opportunity to serve my fellowmen. . . . It is well known that I am inexperienced in State politics, but my organizational experience, on the other hand, has been fairly extensive. For some years I have been affiliated with medical organizations of various types; among these are the Neurological Section of the Associacao Paulista de Medicina, which I served as Director and later as a member of the Council of the Departmenta de Previdencia. In 1945, at the Second Medical Congress of São Paulo, I was asked to serve as President of the old Society of Medicine and Surgery of São Paulo. Later, as one of the founders of the Brazilian Section of the International College of Surgeons, I was chosen as the first President of the Section; then, successively, I became General Secretary of the College of South America, First International Vice-President of the College and finally International President, which office I hold today. Since the International College of Surgeons is the largest world-wide organization of its kind, I count this a high honor indeed. During the thirty years in which I have held office in our Charity Hospital I have seen many of my ambitions change from dream to reality.

"It is with the help of this experience that I hope to serve as Secretary of Health and Social Assistance in my native State, for it has taught me that to direct and to organize means to work with a group. Whatever the efforts made by the head of any group, they can be successful only when they are seconded by the loyal work of all direct helpers and members of the organization. I know and admire the work done by my predecessors in this office, and I know that the members of this secretariat are always willing to give their best efforts to the full discharge of its functions.

"I shall begin work immediately on the new and challenging task with which I have been entrusted and will do my utmost to acquit myself worthily."

Those who know Prof. Gama and have worked with him cannot doubt that he will not only acquit himself worthily but add new lustre to the office he assumes. In addition to the experience mentioned in his address. Prof. Gama has served as Professor of Neurology at the University of Bahia, Professor and Head of the Department of Neurology of the Medical School of São Paulo, Chief of the Neurologic Clinic of Santa Casa de Misericordia and President of the Academy of Medicine. As a Fellow of the International College of Surgeons and now its President, he has spared no effort in his support of the causes he believes in. His colleagues will extend their warmest congratulations not only to Prof. Gama himself but to the State of São Paulo and the Governor thereof for his wise and perceptive choice of a leader so outstanding.

Comments by the Founder

The Limitations of Candor

At frequent intervals during the past few decades the question of telling "the truth, the whole truth and nothing but the truth" to a patient with a malignant neoplasm has aroused heated controversy among physicians and surgeons. Those who believe in the "realistic" approach to the patient himself have even gone so far as to cite the Golden Rule, saying, in effect, "Put yourself in his place. How would you feel if your physician or surgeon, whom you have a right to consider your friend, concealed from you a fact of vital importance not only to yourself but to those who love you and all to whom your life is a part of their own?" Those who take the opposite view reply, "You are begging the question. The fact is always made known to the patient's nearest and dearest, and it is within their power, if they wish, to tell his friends. With regard to the patient himself, it is precisely because he considers you his friend that you must not tell him. However well you know him and whatever opinion you may have of his fortitude and self-command, you deny another fact of vital importance by telling him this one: the fact that even the wisest physician or surgeon, the truest and most understanding friend, cannot judge in advance the effect of so appalling a revelation. Is it the act of a friend to take the risk? If the carcinoma is curable, you can place the patient under a strain that may well destroy him; he may live for years in perpetual suspense, dread of recurrence and uncertainty with regard to every phase of his life. If it is incurable, you take away his capacity for hope, which alone supports a man in the battle all men must fight to retain their manhood. If he is emotionally unstable, you may well cause his total disintegration as a human being. Do you not see the effect of such a catastrophe, not only upon the patient himself but upon those who love him and depend upon him? Finally, have you practiced medicine or surgery all these years without the humbling experience of seeing a totally unexpected and totally inexplicable recovery take place, for no reason science can determine or the ascientific mind can accept? No, my friends; each of you must be guided by the dictates of his own conscience, but as for me I can take no such risk; I could as soon stab my patient through the heart. Am I God, to kill and make alive? Can I not kill my patient as surely as if I did so stab him, by putting an end to all hope and joy within him?"

Dr. Max Thorek

I need scarcely say, to those who know me even slightly, that I belong to the second school of thought. I maintain this position even in the face of the one really cogent argument the opposition has to bring—that, even with the palliations of modern science, incurable malignant disease is so humiliating, nay even so insulting, to a man's conception of himself and his dignity as a human being as to make his life seem to him no longer worth the living. Even this, however, by no means applies to all. I have seen, and so has every other doctor of experience, human dignity on so high a level that the additional step required to accept suffering and depletion was taken, so to speak, at a single bound. The more genuine human dignity is, the more certainly it will advance instead of retreating. I realize that this argument could be turned against me, to the apparent profit of my opponents; but their triumph would be falsely founded, since it is the sad but inescapable fact that few patients attain to nobility on this scale. The overwhelming majority look to the doctor for hope, not challenge, and I regard it as implicit in my Hippocratic oath that I give them hope if I can and as long as I can.

The controversy has lately had a public airing outside the profession, in the publication by Random House of Lael Tucker Wertenbaker's book *Death of a Man.* Charles Wertenbaker, the author's husband, was also a professional writer, and her book is a moving human document on the humiliation and insult aforementioned. Mrs. Wertenbaker agreed with her husband that it was his inalienable right to know the nature of his illness, at any cost to either of them. Having learned that he had but a short time to live, the couple set themselves to the task of accepting the fact honestly and with as little fear as possible, and came to an equally unqualified agreement that another inalienable right of the sufferer was to suffer no longer than was compatible with what he regarded as decency.

One must grant them both the courage of their convictions. Mr. Wertenbaker endured the tyranny of body over mind for a time, but when at last he could no longer control his suffering with drugs, he slashed his wrists—with a razor handed him by his wife.

It is an impressive story—up to a point. It will make a tremendous impression, no doubt, upon that not inconsiderable portion of the public which has lately become so fond of analyzing human motives *a la psychiatrie* on every possible occasion. Its strongest appeal is to the middle ground of opinion; simpler minds than the Wertenbakers' will reject it, and so will the true intellectual as distinguished from the pseudopsychiatrist. In all justice to the author and respect for her suffering, it must be said that no reader with any humane impulses in his makeup could read it entirely without sympathy. Mrs. Wertenbaker has written it beautifully—again up to a point: the point at which journalism ceases and literature begins.

The first impression, however, does not last. On reflection, the first thing that emerges is the fact that Mr. Wertenbaker felt in all sincerity that he could pay his wife no greater tribute than to make this inhuman demand upon her, and the next is its inescapable corollary—that if he had chosen life instead of death the demand upon her would have been infinitely greater and far less cruel.

In the passage that describes his death, Mrs. Wertenbaker says she cried out, unable to endure his suffering longer, "I love you, I love you, please die." Dramatic, unquestionably, and just as unquestionably convincing; I for one have no doubt that it is true. The fact remains that at the moment Mr. Wertenbaker was not suffering physically, and from the book's account his emotions did not go beyond relief and the satisfaction of having made what he considered a man's decision. The cynic that lurks at the back of every intelligent mind requires a firm hand to repress him at this point. To the majority of the reading public, which is amazingly healthy-minded on the whole, the essential sentimentality posing as reason and realism will not be convincing once the book is laid down.

Life and death, the two most stupendous human realities, are far too majestic to be treated as experimental material. The doctor, of all others, should know this. His experience is one man's experience multiplied a thousandfold, and the greater his perception of the meaning of that experience the more hesitant will he become to assume the prerogatives of the Almighty. He will be tempted to it all his life long; it cannot be otherwise, since he has been given prerogatives and privileges of his own that outnumber astronomically those given to others. Let him acccept them, for he will need them all; but let him not imagine, because they are his, that he may usurp the mind of the Infinite, however much he feels he could improve it.

desirable. There is no truer saying than that "travel broadens one intellectually"—then, when a surgeon travels and exchanges ideas with the men of other nations, he returns to his home a much better, a much sounder professional man.

After my return from Arizona, I made a hurried trip to Santo Domingo, to confer with the President of the University as to the program for 1957-1958. Because of the outstanding success of the surgical symposium held there in December, it was the unanimous opinion of the University officials that the program should be repeated, and there was complete concurrence from the Governmental officials. The program will be published in a subsequent issue of the Bulletin.

On March 27 it was my pleasure to meet Dr. Roger Anderson, Regent of the State of Washington, as well as the officers and members of the Credentials Committee, at a dinner in Seattle, Washington. Plans of the College for the next year were discussed, and ways and means of interesting young surgeons in the International College of Surgeons were investigated, with emphasis upon the international aspects.

On the following day I met with Dr. Ben Wade and his Officers at a luncheon in Portland, Oregon, where similar subjects were discussed. The next day I was the guest and speaker at a meeting of the Governor's Committee of the State of Oregon for the Employment of the Physically Handicapped. This was very pleasing to me, as I met many of my old friends.

On March 31 it was my pleasure to meet the new regent of the State of Idaho, Dr. Alfred H. Rossomando. On that evening a dinner was held, with discussions similar to those held in Oregon and Washington, and I hope much good will come from this meeting. Dr. Rossomando is a highly respected surgeon and deeply interested in increasing the membership in Idaho. Idaho, being a very large state finds its towns widely separated, so it is rather difficult to bring the members together. As in Oregon, I was a guest of the Governor's Committee for the employment of the Physically Handicapped. A number of our Fellows are members of that Committee. I then returned to Chicago, more than satisfied and with a sense of time well spent.

For information pertaining to qualifications for
Fellowship or Associate Membership
in the

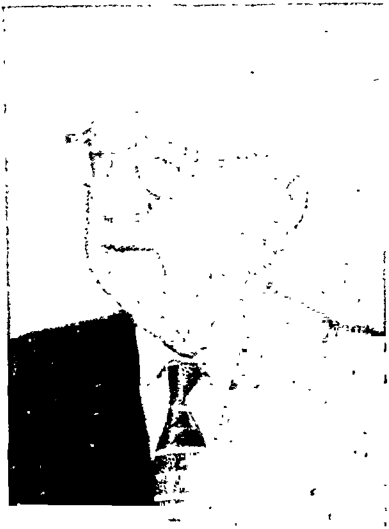
Canadian Section, International College of Surgeons

please write

E. N. C. McAmmond, M.D.
Suite 2, 1701 West Broadway
Vancouver 9, B. C., Canada

WHO'S WHO IN THE INTERNATIONAL COLLEGE OF SURGEONS

Prof. Dr. Arthur Hübner, F.I.C.S.



Dr. Arthur Hüber, F.I.C.S.

Professor Dr. Arthur Hübner, F.I.C.S., of West Berlin-Grünewald, Germany, was born on Aug. 29, 1887. Reaching young manhood, he studied medicine at the University of Berlin. After passing his State Board examination in 1913 he specialized in surgery. His many talents soon won him recognition; in 1927 he became a lecturer at the University, and in 1930 a Full Professor of Surgery.

Professor Hübner began his active career with an outpatient clinic of his own, where most of his work consisted of the emergency surgical treatment of accidental injuries. In 1945 he was appointed Medical Director of a municipal hospital in Berlin and retained the post with great success and esteem until 1952, since which time he has been engaged in private practice.

In addition to his central routine as a surgeon, Prof. Hübner found time and energy to serve as editor of two professional journals, *Der Chirurg* and *Monatsschrift fur Unfallkunde.* He is also the author of several important books, the titles of which indicate the wide range of his interests and the versatility of his character:

Lehrbuch der Gastroskopie (A Textbook of Gastroscopy)

Lehrbuch der Fraktures und Luxationen (A Textbook on Fractures and Luxations)

Arzthaftpflichtrect (The Liability Law Concerning Physicians)

Notoperationen und dringende Massnahmen des praktischen Artzes (Emergency Operations and Urgent Interventions Confronting the General Practitioner).

Since 1946 Prof. Hübner has been General Secretary of the German Surgical Society.

The possessor of well-merited national and international distinction, Prof. Hübner has never for a moment lost sight of the essential purpose of every Physician's and surgeon's career, the healing of injuries and diseases. Through his regular practice, his lectures, his books and his organizational activities this thread runs clear and strong. As a Fellow of the international College of Surgeons he is keenly aware of the world's great need for widely shared knowledge of surgical technic and dissemination among physicians and surgeons everywhere of all available data on research, new remedies, and modern surgical technics. He is first and foremost a surgeon, but he remains a student, both of surgery and human affairs, as is evident from his remarkable treatise on medicolegal problems. A severe critic o a pretensions without visible basis, he remains without prejudice and willing to give credit where credit is due. He is a delightful acquaintance and a steadfast friend. His qualities of mind and spirit, in a word, are those which are rapidly coming to typify the International College of Surgeons in the minds of intelligent observers throughout the world.

Dr. Everett P. Coleman, F.A.C.S., F.I.C.S.

Dr. Everett P. Coleman, F.A.C.S., F.I.C.S., who was recently elected President of the Western Surgical Association, one of the most important surgical organizations in the United States, was born in Canton, Illinois, on Sept. 10, 1891. His parents were Dr. James Edmund and Nettie (Porter) Coleman, both of whom were members of old pioneer families.

After his graduation from the College of Medicine of the University of Illinois, Dr. Coleman served his internship in Cook County Hospital. He then spent more than two years in the service of the United States Army with the rank of Captain in the Medical Corps. One year of his military service was dedicated to work in Evacuation Hospital No. 4 in France.

Dr. Coleman is the author of a number of articles on abdominal surgery, and is a member of the following organizations: Fulton County Medical Society, Past President; Illinois State Medical Society, President from 1944 to 1946 and for two years Chairman of the Council; American Medical Association, Mississippi Valley Medical Society, President in 1940; Western Surgical Association, elected President for the 1957 term; American Association for the Surgery of Trauma; American Goiter Society; American Association of Railway Surgeons; Central States' Society of Industrial Medicine and Surgery; American Association of Industrial Physicians and Surgeons; Association of Military Surgeons; Illinois Surgical Society, President in 1956; and Pan Pacific Surgical Association.

Dr. Coleman is a Fellow of the American College of Surgeons and of the International College of Surgeons. He is a member of the World Medical Association and the Pan Pacific Surgical Association. He is a Diplomate of the American Board of Surgery and a member of the Founders' Group. He is a member of the House of Delegates of the American Medical Association and has served as a member of its Committee for the Care of the Indigent. For several years he was Chairman of the Illinois State Medical Society Advisory Committee to the Illinois Public Aid Com-

Dr. Everett P. Coleman, F.A.C.S., F.I.C.S.

mission and to the Medical Advisory Committee of the United Mine Workers' Welfare and Retirement Fund.

He is a member of the Canton (Illinois) Rotary Club and its Past President. He also belongs to the Masons, the Shrine and the Elks. He also holds membership in the Canton Country Club, Wee Ma Tuk Hills Country Club, Creve Coeur Club of Peoria, International Club of Chicago and the University Club of Chicago.

Dr. Coleman is co-founder of the Coleman Clinic in Canton, and President of the staff of the Graham Hospital of the same city. He was married to Gladys Huff, of Atlanta, Illinois, in 1917. Their two children are Eleanor Irene Coleman of New York City and Louise (Coleman) Scott, wife of Senator Albert Scott of Canton, Illinois.

INTERNATIONAL COLLEGE OF SURGEONS OFFERS LIFE INSURANCE PLAN

The College is offering and heartily recommending to its members throughout the world a $10,000 group life insurance plan, to become effective when 1,500 members have registered.

Enrolling members will sign a "self-health" form. This is for the purpose of assuring the underwriters that the member is physically able to actively practice his profession and that he is free of any physical ailment serious enough to threaten the soundness of the plan.

The premiums are reasonable and may be paid annually or semiannually. The plan is underwritten by the American Life Insurance Co.

Entry into the plan will be available to those who are aged 60 or younger (an age change will be considered as occurring six months prior to the next birthday).

In the absence of Dr. Horace Turner, F.A.C.S., F.I.C.S. Chairman of the insurance Committee of the International College of Surgeons, Dr. Ross T. McIntire, F.A.C.S., F.I.C.S., Executive Director of the College, reported on the plan at a meeting of the Executive Council of the United States Section. Dr. McIntire emphasized the great advantage of the plan to Fellows abroad and to Junior Members.

The plan is, of course, entirely voluntary. "It will be administered at no cost to the College," said Dr. McIntire, "since all of the record keeping, reporting and collection of premiums will be in the hands of an insurance firm, who have agreed to give us an indemnifying bond holding the College harmless of any possible claims arising through errors in administering the plan."

The Executive Council formally approved the plan, subject to the following stipulations:

1. That it be offered on a strictly voluntary basis.
2. That the College will not be liable in any way under the plan as adopted.
3. That the entire administration of the plan will be the responsibility of the underwriters and will involve no expense to the College.

The proposed rates and ages that form the basis of the plan are as follows:

		Premiums	
Attained Age	*Amount of Insurance*	*Annual*	*Semiannual*
Under 40	$10,000	$ 70.00	$ 36.00
40 to 49	10,000	110.00	56.50
50 to 54	10,000	170.00	87.50
55 to 59	10,000	250.00	129.00
60 to 64 (renewal)	7,500	250.00	129.00
65 and over (renewal)	5,000	250.00	129.00

*Upon reaching the insurance age that moves him into the next higher bracket, the insured member will pay the new rate.

Second Around-the-World Postgraduate Clinics Trip, International College of Surgeons

NEAL OWENS, M.D., F.A.C.S., F.I.C.S.
NEW ORLEANS, LOUISIANA

The departure of the Second Around-the-World Clinical Course, sponsored by the International College of Surgeons saw a considerable group of members assembled at the airport in Los Angeles on Saturday, Oct. 13. At 10:30 a.m. we boarded Pan American Flight 805 to Honolulu. The flight across the Pacific was beautiful. Arriving in Honolulu, were immediately transferred to the Royal Hawaiian Hotel. After an excellent night's sleep, we arose the next morning ready to enjoy the day. Since contacts had been made with numerous friends on the island, we found a variety of interesting sights and places awaiting us.

At 6 o'clock next morning we left for Wake Island. We had little time to enjoy the sights of this lonely but lovely island, which is situated a little more than half the distance between Honolulu and Tokyo. We were there only forty-five minutes, but this was ample time for us to enjoy a delicious meal that awaited us; immediately thereafter we boarded our flight to Tokyo, arriving there about 2 a.m. after approximately seven hours.

The day of our arrival was October 17.

On October 18 we were privileged to visit one of the outstanding hospitals in Tokyo as guests of Dr. Shiota, dean of Japanese surgeons, and one of the finest men I have ever met. With characteristic courage and courtesy, Dr. Shiota came to the hospital that morning, two days after the death of his son, and received us in

At Tokyo University, October 18. Left to right, Dr. H. Shiota, F.I.C.S. (Hon.); Dr. Neal Owens, F.I.C.S., and Dr. S. Kikuchi, F.I.C.S. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

Scene in Tokyo, October 24. Left to right, Mr. Kimura, head of rug company; Prof. Dr. S. Kikuchi, F.I.C.S. Dr. H. Shiota, F.I.C.S. (Hon.), President of Japan Section, and Mrs. Kimura. Beautiful rug in background will be presented to the International Surgeon's Hall of Fame for its Japanese room. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

the true Japanese spirit. This gesture on the part of so highly respected and so lovable a man was one of our most impressive experiences.

The meeting that morning was held at Tokyo University, where we saw an amazing example of Prof. S. Kimoto's brain-cooling surgical technic. The organization and teamwork Dr. Kimoto achieved while performing his difficult operation were an inspiration.

The morning was memorable also for five other operations performed at the University of Tokyo. We were then conducted to the Tokyo Women's Medical College at Shinjuku, where we saw an impressive demonstration of the work of Dr. S. Sakakibara in solving some difficult problems of cardiac surgery. A full day of medical demonstrations was enjoyed by the entire party.

After the last demonstration the group returned to the hotel, and that evening all members of our party, including their wives, were entertained by a local Japanese group at a delightful dinner. After a short night's rest, we were called early next morning and taken by bus from the Imperial Hotel in Tokyo, through the

Scenes at Tokyo University. Above, a motion picture shows a cardiac operation by Prof. S. Kimoto. Below, left to right, Dr. H. Shiota, Dr. Owens and Dr. S. Kikuchi. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

Prof. Dr. Nakayama's clinic at Chiba University. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

beautiful Japanese countryside, down to Chiba University. We arrived at 9 a.m. and were greeted by **Prof. N. K. Nakayama,** who directed us to his surgical department at the School of Medicine. Here we were presented with a schedule of operations for the morning, which consisted of six gastric resections, to be done between 10 a.m. and 1 p.m. It was the consensus that Prof. Nakayama's technic and his surgical dexterity are unique.

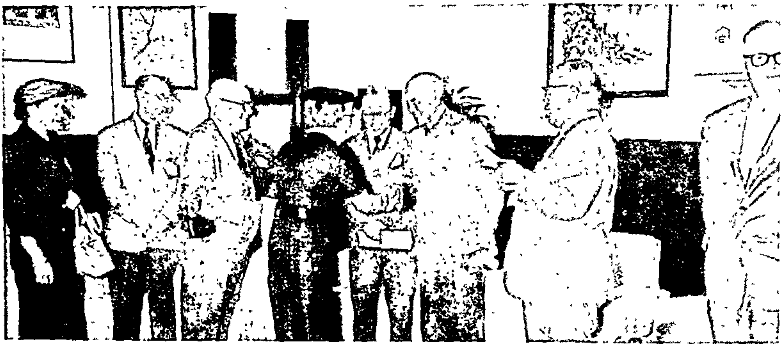
The party left Tokyo next morning on a chartered bus trip through the interior.

We arrived back in Tokyo's Imperial Hotel on Tuesday morning, October 23, for a day of leisure. The next morning our party left for Formosa. On arrival we were greeted by a true representative of Chinese philosophy, our friend **Dr. J. Euy Liu** and a large group of local physicians, who graciously assisted us through customs. With Dr. Liu and his party were **Dr. H. K. Wong,** the secretary of the International College, and **Dr. Hughes,** who is a U.S. attaché of the Navy at Taipei. Others present were **Drs. S. W. Lee, H. M. Hong, F. W. Ting, Capt. Robt. Phillips** (associated with the Navy Personnel at Taipei) and **Dr. T. L. Jung** from the Center Clinic in Taipei. **Drs. T. K.**

Scene in Tokyo. Facing camera, left to right, Dr. Fox, Dr. Kikuchi and Dr. and Mrs. Littlepage. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

Kao, Ten Y. Lin, S. Y. Chiu, T. Y. Wei and Y. M. Yang represented the Clinic at the University Hospital. Also present were Dr. H. W. Lei, Dean of the Taita University College at Taipei, and General C. P. Liu, director of Medical Defense. A most interesting meeting took place at the Taita University, where many notable papers were read by the distinguished professors of this fine University. Later, we were entertained at dinner by General C. P. Liu and Minister C. Y. Chang at the Grand Hotel.

While in Formosa we met with the



Visitors presented to General Chiang Kai-shek. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

Luncheon group at Tei Pei, Formosa. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

Luncheon of officers of the Hong Kong Section. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

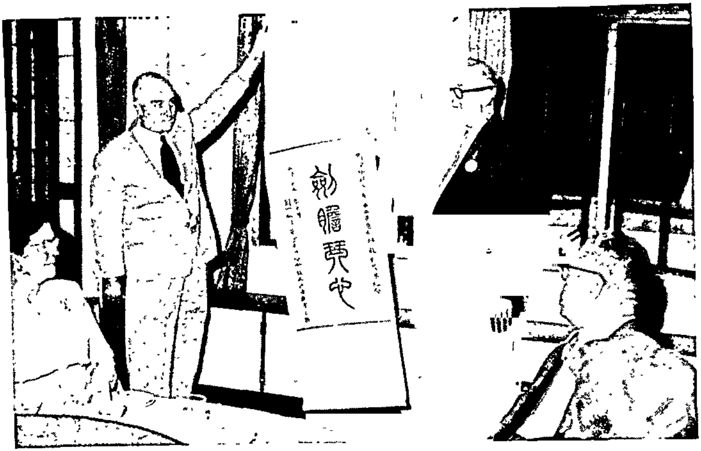
American Ambassador, and we were also able to meet **General Chiang Kai-shek.** Owing to a rather serious illness, it was impossible for **Madame Chiang Kai-shek** to be present. Everyone was impressed with the Generalissimo, who received us genially and graciously. As usual, Dr. J. Huy Liu was master of ceremonies.

We left Taipei on Friday morning aboard the CAT airline's Flight 201 for Hong Kong. Arriving there at 12 noon, we checked in at the Hotel Miramar. The arrangements for our stay in Hong Kong were made by **Drs. John Grey** and **Kenneth Hui.**

The great beauty of Hong Kong harbor and the surrounding countryside delighted us all. This is easily one of the most fabulous cities it has been our privilege to visit. It has a peculiar type of beauty —an impressive mountainous background and innumerable buildings reflecting both antiquity and modernity.

Our party was so fortunate as to have Dr. J. Huy Liu accompany us to Hong Kong. We were delighted at this gracious gesture on his part for we all had enjoyed his companionship tremendously, and he gave us inestimable advice and guidance during our entire stay in Hong Kong. Shortly after arrival we went into conference with our Reception party, Dr. John Grey, one of the outstanding British surgeons in Hong Kong and associated with the British army, Dr. Kenneth Hui and **Dr. Arthur Wu,** whose guests we were at a typical Chinese luncheon at the Banker's Club. Dr. Wu also had made arrangements for our entire party to make a circuitous tour of the entire Hong Kong harbor. This was one of the most memorable events of our trip. The appointed yacht was beautiful, and the arrangements for our pleasure, which included a delicious buffet, added to our enjoyment. During the cruise we saw the famous leprosaria among the quiet hills, which serve as havens of relief for hundreds.

We left Hong Kong on Wednesday, October 31, aboard a Cathay-Pacific plane, and arrived in the Philippines three hours



Presentation of scroll to Dr. Neal Owens in Hong Kong. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

Visiting Fellows in the Philippines, after meeting with Dr. Quintos, Director of the Philippines General Hospital. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

later. We were welcomed there by **Dr. Gumershindo Garcia**, President of the Philippine Section, **Dr. Basilio J. Valdes, Dr. José Y. Fores** as well as **Drs. Guerrero, Gomez, Yapp, Gusman, S. Spinola, Laico and others.** They took us to the Hotel Manila, for luncheon, after which we were off to another sightseeing tour of historic interest, including the old walled city, the University of Santa Thoma, the Manalacan palace, the industrial district and the harbor.

That evening we attended a most impressive Fellowship banquet planned by the members of the Philippine Section for the Second Post-Graduate Surgical Clinical group and in collaboration with the Philippine College of Surgeons. Here we had the pleasure of seeing **Dr. and Mrs. Howard Nosinger** of San Francisco, who were in Manila en route to the medical meetings in Australia. We were particularly fortunate in meeting **General Valdes,** whose service during the Second World War as a liaison officer with General McArthur is well known. Later we came to know **Dr. Gumershindo Garcia,** President of the Philippine Section, a quiet physician possessed with great love and concern for his fellow man. At the Mary Johnston Hospital Dr. Garcia quietly directs and surveys professional activities.

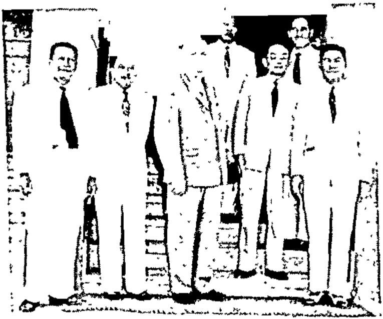
A trip to Corregidor, arranged by General Valdes with the Philippine Government, was prepared for us. Next day we visited clinics and surgical demonstrations and went to Santo Tomas, a most impressive institution, signifying the historic development of medicine in the Philippines and also the tremendous interest and concern of the many great men who are dedicating their lives to its continuation as an institution for improved teaching and relief to sufferers in the Philippines. An excellent program was given by members of the staff at Santo Tomas.

Late in the same day we were transported to the Veterans Memorial Hospital at Quezon City to survey one of the finest, most modern hospitals, fully and thoroughly equipped and staffed by a coterie of capable physicians. A delightful dinner was given that evening, followed by another meeting which proved to be extremely interesting.

Another moving force which was of tremendous aid to the International College of Surgeons in arrangements was the young, forceful and ambitious President-Elect, who is also President of the Philippine College of Surgeons, Dr. José Y. Fores. Our plane arrived in Bangkok, Thailand, at 3:15 p.m. Through the efforts of **Vice Air Marshal Hua Punsoni** and the President of the Thailand Section, **Lt. Col. Nitya Vejjavisit, Dr. Sem Pring Punang-Geo,** and numerous other local physicians of the Thailand Section, we were afforded a most unusual reception, in the form of a cocktail party at the airport. It was a delightful surprise and much appreciated.

Later we were taken to the Hotel Ratanakosin, and after dinner our entire group, invited by **His Excellency Premier-Field Marshal P. Pibulsonggar,** attended a show at the Ministry of Culture. This colorful production was staged by students

Dr. Owens (left) and Air Vice-Marshal Chua Ponyasoni, President of the Thailand Section. *[On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.]*



Visiting surgeons, headed by Dr. Owens, gather with Thailand Fellows in front of the meeting hall. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

from the local University. On the following morning took a sightseeing tour of the canals of Bangkok and enjoyed the amazing sights along the floating markets.

On Monday morning we were taken to Santithum Hall for the Second Annual Meeting of the Thailand Section of the International College of Surgeons. Under the direction of Dr. Nitya Vejjavisit, President of the Thailand Section, the official cap, gown and diploma of the organization were bestowed upon His Excellency Premier Field Marshal P. Pibulsonggari. The Premier then conferred degrees on four local Fellows of the College, **Col. Praderm Bijaphara, Dr. Charoen Bukhasuban, Dr. Romsai and Dr. Tinrat Stitnimankarn,** and delivered an address.

His Excellency Premier Field Marshal P. Pibukonggram and Lt. Col. Nitya Vejjavisit. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

His Excellency Premier Field Marshal P. Pibukonggram congratulating a new member of the Thailand Section. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

After this ceremony, Chairman Lt. Col. Dr. Nitya Vejjavisit delivered a paper entitled "Fifty Years' Progress of Surgery in Thailand." That evening a delightful dinner was given at Dr. Sem's institution, where our group met local members and their wives.

Next day we enjoyed a sightseeing tour that included the Royal Palace and grounds, the Pantheon of Kings, the Tow-

Dr. Sem and visiting friend in Thailand. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

ers of Nine Planets, the Pasteur Institute, the Court of a Thousand Birds and other interesting sights. Leaving Bangkok at 5 p.m., we set our course toward Calcutta. We arrived at 8:50 p.m. and were greeted by **Mr. Reams, U.S. Consul General,** and **Mrs. Reams.** The following morning was spent in sightseeing; the Hawrah Bridge, the Botannical Gardens, the Race Course, many of the residential quarters, and Fort St. William, Eden Gardens.

Our party left Calcutta on the following morning for New Delhi. We went by private automobile to Agra, owing to the congestion in New Delhi. After a long drive we reached the Hotel Lourdes that evening. Most of the next morning was spent visiting the Taj Mahal, the surrounding countryside and the Fort. Before returning to the Hotel we visited the Fatehtur Sikri.

The next morning we left by private automobile for Jagpur, arriving there in time for luncheon and stopping at the Circuit House.

On Monday our party drove back to New Delhi. After a delightful luncheon with some of the local doctors, we visited the Secretariat; the Raj Ghap, Mahatma Gandhi's cremation ground; the Government Offices, and Janpar Mantar, Humayan's Tomb, Kutub Minar and many other points of interest. We left New Delhi that evening and at 10:30 p.m. arrived in Bombay, where we were registered at the Hotel Taj Mahal. On Tuesday, November 13, our party visited the gateway of India, the Marine Drive, the Hanging Gardens and the Victoria Gardens Aquarium. On Wednesday, through the courtesy of **Dr. R. N. Cooper** and other friends and members, an outstanding meeting was held at the Gordhan Das Sunderdas Medical College. The lecture was held at the K.E.M. Hospital site. Officiating at the meeting was **Dr. Balrgas,** Professor of Surgery. Many local surgeons were in attendance.

On Thursday an interesting program was arranged by Dr. Cooper and **Dr. DeSa**—we saw subtotal gastrectomies, pulmonary lobectomies, cholecystectomies, operations for diaphragmatic hernia and Heller's operation for cardiospasm.

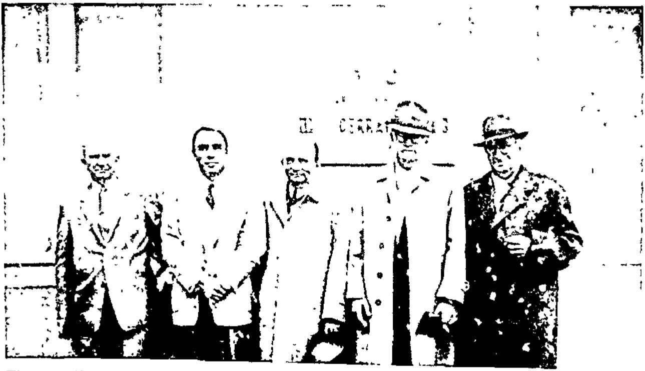
That evening, through the courtesy of Dr. Cooper, President of the Bombay group of physicians and the Indian Section of the International College of Surgeons, a dinner was served at the Radio Club for members of our party.

We devoted the following day to sightseeing and shopping, and on Thursday left Bombay for Pakistan. We arrived at the Hotel Metropole in Karachi at 1:40 p.m. and spent what remained of the day on a sightseeing drive.

On Friday, November 16, we enjoyed a full and interesting program planned for us by **Lt. Col. A. K. N. Kahn.** Many interesting papers were presented by **Dr. M. H. Toosy, Lt. Col. Said Ahmad** and others. There was also a full session during the afternoon, at which papers were presented by Dr. Kahn, **Dr. Munawar Ali** and **Dr. Z. K. Kazi.** A luncheon at the Karachi Boat Club was given in our honor by Parke Davis and Company, with **Mr. and Mrs. E. V. Hopkinson** as host and hostess.

The next stop was the Hotel Caravan in Teheran, Iran, where we arrived on Saturday, November 17. On Sunday, November 18, a charming dinner was proffered us at the Hotel Metropole by the Iranian Section, whose Secretary, **Dr. E. Hazrati,** was most helpful throughout. Here we made the acquaintance of **Prof. Dr. Y. Abr,** President of the Section; **Dr. M. A. Sabr,** President-Elect, and **Dr. G. H. Mossadegh,** Vice-President. Also present were **General Dr. Nabjaf-Zaveh, Dr. M. Tezechvan, Dr. Essamly, Dr. N. Zarrabi** and **Dr. N. Ameli.** On Sunday, November 18, under the able management of Prof. Abl and Dr. Hazrati, an interesting program was offered by the Iranian Section in collaboration with **Dr. A. V. E. Ghbal,** President of the University of Teheran and Minister of the Imperial Court. In connection with this meeting we also met **Dr. J. H. Saleh,** the Minister of Health. We visited various surgical services and the Cancer Institute of the Pablavi University Hospital, where we watched Dr. Essamly operate for a cyst of the brain with multiple cysts of other organs. Later, at the Conference Hall of the University, we attended a scientific meeting with a series of excellent presentations. In the evening we attended a dinner given for us by the President of Teheran University, at the University Club.

Leaving Teheran with many regrets, we arrived in Istanbul Monday afternoon and were met at the airport by a group of Turkish surgeons, headed by Dr. Arel, President of the Turkish Section, and inincluding **Drs. Gurkan, Gorbon, Sezer, Nadipljlu** and **Maniyabe.** Our party was then checked into the Istanbul-Hilton Hotel, where on Tuesday we were met and called for by Dr. Arel and his associates and taken to the First Surgical Clinic of the University of Istanbul, which is the Cerrah Pasa Capital Hospital. There we saw many outstanding operations performed by Dr. Arel. Included were an operation for pericarditis, a "blue baby" procedure, cholecystectomies, operations for pyloric stenosis, etc. The clinical



Three Fellows of the College Arrangement Committee of the Turkish Section. At right, wearing hats, Dr. Neal Owens and Prof. Fabri Arel. [*On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.*]

Arrival at Hellenikon Airport in Greece. At center, Dr. Owens (with camera) and President Louros. *[On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.]*

President Louros addressing the group at a luncheon held at the Royal Yachting Club in Athens. *[On the occasion of the Second Around-the-World Postgraduate Surgical Clinics Trip of Members of the International College of Surgeons.]*

demonstrations and operations filled the morning, and our party spent the afternoon at leisure. At 8 p.m., we left a delightful reception at the home of Prof. Arel, one of Turkey's outstanding citizens. Here we met practically all of the members of the Istanbul Section and their wives, and also enjoyed the companionship of the Mayor of Istanbul.

On Friday Dr. Arel met us at 7 a.m. and accompanied us to the airport for our flight to Athens. Our flight to Greece was a very pleasant one. We arrived at 2:55 in the afternoon and were met by **Prof. Louros** and his associates. That evening, as guests of Prof. Louros, we went to a cocktail party at the Grand Bretage Hotel, where we met the local surgeons and their wives. Next morning an interesting program was offered at the General Hospital, the Evangeelismos, and also at the State and University Hospital, the Alexandra. Later in the morning, at the Laicon Public Hospitals, we heard an address by the President. We saw a film on thoracic surgery, which we enjoyed tremendously.

At 1:30 a luncheon was given at the Yachting Club by the Greek Section of the International College of Surgeons for our members and their wives. The United States Ambassador and his wife were also guests. Our group then went sightseeing and shopping. In the evening we enjoyed a cocktail party at the home of the Secretary General of the Greek Section, **Prof. Nicholas Christeas**, and his charming wife.

Prof. Louros, summarizing his medical philosophy, stated: "I think Greek surgeons could give you nothing better to take back to your country than these wishes of the fathers of Medicine, which we ask you to convey with our heartfelt greetings to our colleagues and friends in the U. S. Section and, last but not least, to the great creator of our college, **Prof. Max Thorek.**"

I know that I am expressing the feeling of the entire party when I say that we deeply appreciate the hospitality extended us and the heartfelt friendship that greeted us in every country we visited. It is our sincere hope that we may have the privilege and pleasure of seeing our friends in the United States in the near future, that we may have an opportunity to reciprocate their generous kindness.

His Excellency the United States Ambassador to Greece addressing the group. In the foreground, Dr. Louros and Dr. Owens. *[On the occasion of the Second Annual Good-Will European Surgical Clinics Trip of Members of the International College of Surgeons.]*

The Tenth International Congress

Mexico, D. F., Mexico, Feb. 24-28, 1957

The Tenth International Congress, under the able leadership of **Prof. Dr. Manuel A. Manzanilla**, F.I.C.S. (Hon.), as head of the Organization Committee, was a brilliant success—brilliant in more than one sense, for the historic and colorful setting was in itself a perpetual inspiration. The architectural beauty and individuality of the National University of Mexico are famous, but no pictorial representation can do the University full justice. The four days were filled to the brim with stimulating presentations over a broad field of modern surgical science, highly rewarding visits to points of special interest and the enjoyment of our Mexican colleagues' usual lavish and gracious hospitality. Indeed, not only our colleagues in the profession but the whole of Mexico made the visitors welcome, in the person of His Excellency the President of the Republic, **Senor Don Adolpho Ruiz Cortines**, at whose cordial invitation the Congress was held in Mexico City.

In his arduous work of organizing and arranging the Congress, Prof. Manzanilla, as Chairman of the Committee, was assisted by **Profs. Raul Arturo Chavira**, F.A.C.S., F.I.C.S. (Hon.), and **Francisco Fonseca**, F.I.C.S. (Hon.), Vice-Chairmen, **Prof. Juan Mora**, F.I.C.S., Secretary-General, and **Dr. Manuel A. Manzanilla Jr.**, F.I.C.S., all of whom, like himself, are members of the Faculty of Medicine of the University. The Committee in charge of the scientific program consisted of distinguished surgeons from ten nations, an impressive array. **Prof. Dr. Raoul Fournier Villada**, of Mexico City, Director of the Faculty of Medicine, officiated as Chairman. Other members of the Committee were **Dr. Max Thorek** of Chicago, Founder of the College; **Dr. Henry W. Meyerding**, F.A.C.S., F.I.C.S. (Hon.), D.A.B., of Rochester, Minnesota, Past President of the United States Section; **Prof. Dr. Raymond Darget**, F.I.C.S. (Hon.), of Bordeaux, France; **Prof. Dr. Carlos Gama**, F.I.C.S., of São Paulo, Brazil; **Prof. Dr. Francisco Grana**, F.A.C.S., F.I.C.S. (Hon.), of Lima, Peru; **Prof. Dr. Arthur Hübner**, F.I.C.S., of Berlin, Germany; **Prof. Dr. Felix Mandl**, F.I.C.S. (Hon.), of Vienna, Austria; **Prof. Dr. Francisco Martin Lagos**, F.I.C.S. (Hon.), of Madrid, Spain; **Prof. Dr. Raffaele Paolucci di Valmaggiore**, F.I.C.S. (Hon.), of Rome, Italy, and **Prof. Dr. Jorge Taiana**, F.I.C.S. (Hon.), of Buenos Aires, Argentina. With such a Committee in charge, it is small wonder

Prof. Manuel A. Manzanilla, F.I.C.S., Chairman of Arrangements for the Tenth International Congress, delivers address during opening ceremonies.

Opening session of the Tenth International Congress.

Audience with His Excellency the President of Mexico during the Tenth International Congress.

that the scientific program was remarkable in both quality and quantity.

Another Committee also deserves high honor, namely the Reception Committee, of which Dr. Eduardo M. Morgenstern was Chairman, Dr. Mario Gonzalez Ulloa Vice-Chairman and Dr. Oscar E. Davila, Dr. Agustin Diez de Urdanivia, Dr. David Gutierrez Garcia, Dr. H. P. de Kanter and Dr. Raul Santos Mazal assisting. More than one visiting surgeon may have felt privately that "Royal Reception Committee" would be scarcely an exaggeration, for a right royal welcome. Sharing these amenities on the feminine side was the Committee headed by Doña Gloria S. de Manzanilla, with Doña Guadalupe D. de Chavira and Doña Maria S. de Fonseca as Vice-Chairmen, Doña Emma M. de Mora as General Secretary and Doña Gertrudis A. de Manzanilla as Auxiliary Secretary. One of the pleasantest features of all Congresses is the opportunity it affords for busy surgeons' wives to enjoy the company of their husbands and that of their friends and fellow-workers for the advancement of the profession.

Since the first day of the Congress, February 24, is Mexico's Independence Day, the visiting Surgeons, accompanied by a full Guard of Honor, proceeded to the Columna de la Independencia, Paseo de la Reforma, to lay a wreath on the national monument to Mexico's heroes of independence.

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Later the same day they were welcomed by the Chief of the Department of the Federal District, in the Palace of the Department, Plaza de la Constitución. On this day also the Tenth International Congress was inaugurated in solemn ceremony in the Grand Theater of the Palace of Fine Arts, with the President of the Republic, His Excellency Don Adolpho Ruiz Contines, presiding.

Scientific Program

Sessions of the General Assembly were conducted throughout the four days of the Congress, in addition to which there were special presentations by the Section on Orthopedics and Traumatology, the Section on Plastic Surgery, the Section on Neurosurgery, the Section on Ophthalmology, the Section on Otorhinolaryngology, the Sections on Obstetrics and Gynecology, the Section on Urology, the Section on Surgery of the Liver, Pancreas and Bile Ducts, the Section on Proctology, the Section on Thoracic Surgery, the Section on Basic Surgical Sciences and the Section on Surgery of the Spleen and the Abdominal Wall. Each of these divisions of the surgical field included outstanding presentations, notable for their careful preparation and their up-to-the-minute timeliness. The Section on Basic Surgical Sciences dealt with current research, its results and its application to modern surgery. **Dr. Ross T. McIntire,** F.A.C.S., F.I.C.S., of Chicago, Executive Director of the International College of Surgeons, contributed an excellent paper, 'Research in New Methods of Preservaion of the Red Blood Cells."

In addition to the wide coverage of these pecialties, there was an immensely intersting and stimulating Audio-Visual Secion, with **Dr. Agustin Chardi Cordova,** .I.C.S., heading the Committee. Dr. hardi was assisted by **Dr. David Grajeda** nd **Dr. Carlos Gomez Chico,** Vice-Chairien, and by **Drs. Ignacio Garcia Alca** . larco Ant zcana, Angel El L de la Garza. Ochoa a The au

Dr. Ross T. McIntire, F.A.C.S., F.I.C.S., Executive Director of the International College of Surgeons, addresses Tenth International Congress.

ual program was divided into the following categories: Urology; Orthopedics; Surgery of the Stomach, Intestines, Liver, Pancreas and Bile Ducts; Neurosurgery; Thoracic Surgery; Peripheral Vascular Surgery, and Obstetrics. At the close of each group of presentations and demonstrations a lively and rewarding discussion was held.

Many officers and fellows of the United States Section enjoyed the benefits of this fine Congress and participated actively in the program. Among these, in addition to Drs. Thorek, McIntire and Meyerding, were **Dr. Horace E. Turner,** F.A.C.S., F.I.C.S., of Chicago; **Dr. Arnold S. Jackson,** F.A.C.S., F.I.C.S., of Racine, Wisconsin; **Dr. Roland Klemme,** F.A.C.S., F.I.C.S., of St. Louis; **Dr. James W. Watts,** F.A.C.S., F.I.C.S., of Washington, D. C.; **Dr. Curtice Rosser,** F.A.C.S., F.I.C.S., of Dallas, Texas, President of the United States Section; **Dr. Edard L. Compere,** F.A.C.S., F.I.C.S., of Chi-ro: **Dr. Harry E. Bacon,** F.A.C.S.,

His Excellency Morones Prieto, F.I.C.S., Minister of Health of Mexico, receiving honorary diploma from Prof. Carlos Gama, President of the International College of Surgeons, and Prof. Manuel A. Manzanilla, *Chairman of Arrangements for* the Tenth International Congress.

F.I.C.S., of Philadelphia; **Dr. Peter A. Rosi,** F.A.C.S., F.I.C.S., of Chicago; **Dr. Samuel R. Perzik,** F.A.C.S., F.I.C.S., of Los Angeles; **Dr. Moses Behrend,** F.A.C.S., F.I.C.S., of Philadelphia; **Drs. Saul Shapiro,** F.I.C.S., and **Daniel H. Manfredi,** F.I.C.S., of New York; **Dr. Sidney A. Rosenburg,** F.I.C.S., of Pittsburgh; **Drs. Emanuel M. Skolnik,** F.A.C.S., **Morris T. Friedell,** F.A.C.S., F.I.C.S., **Claude M. Lambert,** and **August F. Daro,** of Chicago; **Dr. James F. Dowd,** F.I.C.S., of St. Louis; **Dr. Salvador Castanares,** of Los Angeles; **Dr. Clifford L. Kiehn** of Cleveland; **Dr. Hebert G. Cohen,** F.I.C.S., of New York; **Dr. Carlos Scuderi,** F.A.C.S., F.I.C.S., of Chicago; **Dr. Joseph C. Risser** of Los Angeles; **Dr. George L. Kraft** of Hollywood and **Dr. Daniel H. Levinthal** of Beverly Hills, California; **Dr. Robert J. Kisitcheck** of Los Angeles; **Dr. Philip Thorek,** F.A.C.S., F.I.C.S., of Chicago; **Dr. Otto L. Bettag,** Head of the Illinois Department of Public Health, **Dr. Joseph da Silva** of the State Hospital, and **Dr. Leonard Krasner,** Consultant in Thoracic Surgery to the Department of Public Health, all of Chicago; **Dr. James M. Ovens,** F.I.C.S., of Phoenix, Arizona; **Dr. Aaron N. Gorelik,** F.I.C.S., of New York; **Dr. Herman O. McPheeters,** F.A.C.S., F.I.C.S., of Minneapolis; **Dr. Arthur Dallos,** F.I.C.S., of New York; **Drs. Philip S. Kline** and **Hesiquio N. Gonzalez,** of San Antonio; **Dr. Philip M. Marcus** of Beverly Hills, California, and **Dr. Louis T. Palumbo,** F.I.C.S., of Des Moines, and **Dr. Juan Negrin,** F.I.C.S., of New York.

Among the European participants were **Prof. Dr. Claude H. Carron,** Laureate of the Faculty of Medicine, Paris; **Prof. Dr. Alfonso de la Fuente** of the Faculty of Medicine, and **Prof. Dr. Francisco Martin Lago,** F.I.C.S., Madrid; **Dr. T. A. Dunkersloot** of Sneck, The Netherlands, and **Prof. Dr. Stefano Teneff** and **Prof. Dr. Domenico Dazzoni** of Turin.

Prof. Dr. Nahor Carrillo, Dean of the National Medical University of Mexico, delivers presentation, "*Abscess of the Liver.*"

Reception in honor of Dr. Max Thorek at the British Cowdray Hospital.

Exhibits

A fine exposition of technical commercial products related to surgery and surgeons had been prepared. Intermissions of three-quarters of an hour were arranged in each day's program, morning and afternoon, in order that the participants and guests of the Congress might acquaint themselves anew with the ingenuity of the modern mind. As always, the exposition was highly popular. Despite the serious scientific discussions and presentations that occupied most of each day, the break in each surgeons everyday routine created a relaxed and interested frame of mind and a readiness to examine, admire and appreciate both ingenuity and novelty

Entertainment

The well-known Mexican bountiful hospitality was abundantly evident throughout the Congress. The Comite de Damas arranged many charming social activities. On February 25, at the Teatro del Bosque de Chapultepec, a pageant of native folklore was offered at the National Institute of Fine Arts, through the courtesy of the Secretary of Public Education.

On February 26 a reception was given at the American British Cowdray Hospital in honor of Dr. Max Thorek, Founder of the International College of Surgeons. This too was a most delightful occasion and will be long remembered. A showing of typical Mexican costumes was featured, adding color and charm to the scene.

Banquet

The closing ceremonies of the Tenth International Congress took place in Auditorium No. 1 of the Faculty of Medicine building, with the Secretary of Health and Assistance presiding as representative of His Excellency the President of the Republic, and that evening the occasion reached its climax in the magnificent banquet. The place selected for this memorable gathering was the Salon de los Candiles at the Hotel del Prado. A delicious dinner was accompanied by good conversation and a strong sense of mutual understanding and friendship, mingled with some inevitable regret that so thoroughly rewarding an enterprise had come to an end.

Only until the next time, however, for such a Congress bears its fruit in Congresses to come. There are few satisfactions equal to that which comes of combining duty and pleasure in due proportion; there is no substitute for the friendship, strong and enduring, that such occasions create between one nation and another. It is certain that no guest left Mexico last February without having enriched his store of knowledge, enjoyed the opportunity of communing with friends, old and new, and gained new understanding of our neighbor nation, with its unforgettable landscape, its ancient and picturesque traditions and the warm spirit of welcome and graciousness so characteristic of its people.

UNITED STATES SECTION
International College of Surgeons

THE PRESIDENT'S MESSAGE

Things I never knew until now—about Mexico: That the National University of Mexico, located in University City ten miles from Mexico City and the site of the recent International Congress of the College, comprises a magnificent group of buildings constructed of concrete, brick, glass and lava rock, which would command admiring attention in any city or country. That the University was founded in 1551 and is the oldest on the North American continent. That the land on which the building stands was formerly covered by a broad sheet of lava resulting from the eruption of a volcano more than five thousand years ago, which covered the villages of the oldest civilization of this area. That its medical school, which, until one year ago, was housed in the former headquarters of the Inquisition, has 6,000 students.

That Mexico is a land of monuments and murals and that one of the largest monuments in Mexico City is a fountain memorializing the ex-appropriation of the holdings of foreign oil companies.

That the hotels of Mexico have increased their rates progressively as the peso has been devaluated, yet one can still ride ten miles in a taxicab for 80 cents.

That the first domesticated animal in Mexico was the still familiar hairless dog; most of the other domesticated animals, such as horses, cattle and sheep, were brought from Spain.

That English has replaced French as an international language; in Mexico the study of English is compulsory in all schools, starting with the elementary grades.

That the building known as the Tower is not only the tallest skyscraper in Mexico City but the highest in the world—if the fact that its base is 7,500 feet above sea level is considered.

Dr. Curtice Rosser

That Chapultapec, where one sees the fabulous palace of the ill-fated Emperor Maximilian, the great Park and the present home of the President of the Republic, means *grasshopper hill* and that there is a small stone reproduction of this insect, called in Spanish *chapulín,* decorating a fountain in the courtyard of the castle.

That the murals of Diego Rivera, particularly those on the walls of the National Palace, continue to capture the imagination even when studied for the third time; that this artist, now 70 years old and still actively and efficiently employed, is a master in producing the illusion of the third dimension on his canvas. That the magnificent mural he painted for the dining room of the Hotel Del Prado ten years ago, entitled "A Dream of a Sunday Afternoon," contained a quotation, "God does not exist," ascribed to one of the historical characters depicted—and the hotel therefore covered the mural from public view until, one year ago, the artist himself erased the offending words.

That the itinerant vendors of shoeshines are ubiquitous in Mexico City and that it is possible to get your shoes polished while awaiting audience with the President of the Republic in the great anteroom to his office.

That the legend of the Plumed Serpent of the Toltecs describes a god named Quetzacoatl, who was fair-haired, blue-eyed and apparently Caucasian. It is thought that he was possibly the survivor of a shipwreck on the Atlantic Coast. He was persecuted by the Toltec priests, who were jealous of his increasing popularity, finally destroyed himself by fire, first prophesying that white men like himself would some day come to destroy the Aztec Empire.

That the arrogant leader of the group of Spaniards who came to carry out this prophecy, and to pillage Mexico, Hernan Cortes, permitted no one to paint his picture while he was alive. Not until a few years ago, when his remains were found and studied by scientists, was the reason for this prohibition discovered: he was hunch-backed and cross-eyed, had bulbous arthritic knees with bow legs, was funnel-chested and had the microcephalic skull of a monkey. Rivera's early murals depicted him as a gallant Charles V. New ones drawn in the past ten years show him as he was.

That no one wears a hat in Mexico and a top coat is unnecessary even at night in February. That it is just as exhilarating to lose 10 pesos (80 cents) on a horse race as to lose $2.00 in U. S. legal tender.

That the mural depicting Don Benito Juarez, the conqueror of the Emperor Maximilian, thrice President of Mexico and the author of the Reform Laws which separated Church and State, shows behind him a triangle with the "all-seeing eye" to indicate that he was a Thirty-Second Degree Scottish Rite Mason.

To sum it all up, the *X Congreso Internacional de Cirujanos* was not only excellent from the scientific standpoint and well attended by Fellows of the United States Section but afforded me the opportunity of learning many things about Mexico that I never knew until now.

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Regional Vice-Presidents

Woman's Auxiliary*

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Mrs. A. T. Eaton, 3 Oaks, Winona, Ontario, Canada
Mme. Leon Gerin-Lajoie, Suite 313, 1414 Rue Drummond, Montreal, Canada
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South Western — **Mrs. McKenzie Hallson**, 1410 South Voss Road, Houston 19, Texas

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*Transferred from p. 46 for lack of space.

WESTERN REGIONAL MEETING AN OUTSTANDING SUCCESS

The April meeting held at the Las Vegas Hacienda, in Las Vegas, Nevada, by the Western Region of the United States Section of the International College of Surgeons, was more than well attended and will be long remembered for both the excellence of the scientific program and the great pleasure afforded by the well-planned social events.

The official program covered a number of vitally important surgical fields. **Drs. Irving L. Lichtenstein**, F.A.C.S., F.I.C.S., and **Martin S. Levy**, of Beverly Hills, California, offered a presentation on hyperthyroidism. The subject chosen by **Drs. A. Bernstein**, F.I.C.S., and **Henry C. Bernstein**, F.I.C.S., of San Francisco, was *An Historical Review of Cesarean Section.* **Dr. Frank E. Polmeter**, F.A.C.S., of Sherman Oaks, California, discussed the causes of imperfect results in the surgical treatment of protruding lumbar and cervical discs. Modern advancements in the treatment of common fractures were outlined by **Dr. Reed S. Clegg** of the University of Utah School of Medicine, Salt Lake City. Other members of the same faculty who participated were **Drs. Preston J. Burnham**, F.A.C.S., **Thomas R. Broadbent**, F.I.C.S., **Mark H. Greene Jr.**, **N. Frederick Hicken**, F.A.C.S., F.I.C.S., **A. James McAllister**, **Vernon L. Stevenson**, F.A.C.S., **Howard P. House**, F.A.C.S., F.I.C.S., **William F. House**, **Edward R. McKay**, F.I.C.S., **J. W. Mortensen**, **H. R. Warner**, **Perston J. Cutler**, **William Ray Rumel**, F.A.C.S., **L. George Veary**, **Robert G. Weaver**, F.A.C.S., and **Adolph M. Nielsen.** Their topics were as follows: Dr. Burnham, *A Physiologic Treatment of Fractures in the Hand;* Dr. Broadbent, *Intra-Oral and Extra-Oral Muscles: Their Effect on the Alveolar Ridge;* Dr. Greene, *Wringer Injuries;* Drs. Hicken and McAllister, *Accidental Injuries of the Bile Ducts;* Dr. Stevenson, *Early Surgical Treatment of Acute Cholecystitis;* Drs. William F. and Howard P. House, *Stapes Mobilization for Restoration of Hearing;* Dr. McKay, *Refinements in the Surgical Treatment of Fistula-in-Ano;* Drs. Mortensen and Warner, *Clinical Quantitation of Aortic Insufficiency and Aortic Stenosis;* Drs. Mortensen, Cutler, Rumel and Veary, *Management of Coarctation of the Aorta in Infancy;* Dr. Weaver, *The Surgical Treatment of the Diseased or Injured Ureter,* and Dr. Nielsen, *Meconium Peritonitis.*

Dr. Harry Alban, F.A.C.S., F.I.C.S., of Long Beach, California, addressed the assembly on the use of ultrasonation in orthopedic practice; **Dr. Edward S. LaMont**, of Hollywood, on plastic surgery, both functional and cosmetics. **Dr. James H. Saint**, F.A.C.S., of Santa Barbara, California, spoke on acute volvulus of the cecum, and **Dr. James J. Morrow**, F.I.C.S., of North Hollywood, on acute pancreatitis. **Dr. Lawrence Braslow**, of Riverside, California, discussed closure of the duodenal stump. A plea for wider use of spinal anesthesia was presented by **Dr. Elliott M. Feigenbaum** of San Francisco.

From the College of Medical Evangelists, Los Angeles, were **Dr. Donald C. Collins**, F.A.C.S., F.I.C.S., Assistant Professor of Surgery, who spoke on the present status of histoplasmosis in the West; **Dr. H. H. Edelbrock**, Associate Clinical Professor of Urology, with a presentation on hypospadias, and **Dr. S. L. Perzik**, F.A.C.S., F.I.C.S., Associate Clinical Professor of Surgery, who discussed the place of radical neck dissection in the management of carcinoma of the head and neck.

Chemodissection: A Three-Dimensional Supplement to Surgery of the Breast was the title dealt with by **Drs. Ralph L. Byron Jr.**, **Keith H. Kelly** and **Howard R. Bierman**, all of the City of Hope Medical Center, Duarte, California. Dr. Byron is Chief of Surgery and Director of the Hospital for Tumors and Allied Diseases; Dr. Kelly, Chief of the Section on Oncology, and Dr.

Bierman, Medical and Scientific Director. **Dr. Charles P. Mathé**, F.A.C.S., F.I.C.S., of San Francisco, presented *Benign Cystic Disease of the Testicle.*

Dr. Alfred Stern of Oakland spoke on arborization of the cervical mucus and its assessment by the fern test; **Dr. Wilton A. Doane**, on the distal arterial outflow and its importance in direct arterial surgery; **Dr. William M. Scott**, F.I.C.S., of Long Beach, on anesthesia for operations on the head and neck; **Dr. Max Cutler**, F.I.C.S., of Beverly Hills, on radical versus simple mastectomy for mammary carcinoma. *Segmental Resection in Pulmonary Tuberculosis* was presented by **Dr. Y. Fred Fujikawa**, F.A.C.S., Thoracic Surgeon-in-Chief of the Los Angeles County Long Beach General Hospital; *A New Method for Single Stage Thoracoplasty*, by **Drs. Buford H. Burch**, Chief of Thoracic Surgery, Patton State Hospital, Patton, California, and **Lawrence Shefts**, F.A.C.S., Associate Professor of Surgery at the University of Texas. The faculty of Creighton University School of Medicine, Omaha, was represented by **Dr. James J. O'Neil**, F.A.C.S., F.I.C.S., Assistant Professor of Otolaryngology, whose topic was *The Surgical Management of Intra-Oral Carcinoma;* **Dr. S. J. Carnazzo**, F.I.C.S., with *Aneurysm of the Splenic Artery*, and **Dr. Jerome J. Murphy**, Instructor in Surgery, with *Complete Catheterization of the Left Side of the Heart.* **Dr. H. I. Harvey**, Assistant Clinical Professor of Medicine at Stanford University Medical School, San Francisco, presented *G O T—Its Diagnostic Value in Surgery.* From the University of California School of Medicine, San Francisco, **Dr. Stuart Lindsay**, Associate Professor of Pathology, presented *The Relation of Thyroid Neoplasms to Hashimoto's Disease*, and **Dr. Franz Buschke**, Professor of Radiology, *Radiation Therapy of Carcinoma of the Esophagus.* **Dr. Angelo M. May** of San Francisco and **Dr. Charles P. Bailey**, F.A.C.S., F.I.C.S., Professor of Surgery at Hahnemann Medical School, Philadelphia, presented *Coronary Endarterectomy.*

Monitors for the various scientific sessions were **Drs. Carroll J. Bellis**, F.A.C.S., **Ross V. Parks**, **Irving Wills**, F.A.C.S., and **Carmelo Celestre.**

The banquet speaker was **Dr. Curtice Rosser**, F.A.C.S., F.I.C.S., of Dallas, Texas, President of the United States Section, and his timely and appreciative comments were warmly appreciated. Once more the archives of the Western Section, and as a result those of the College itself, are augmented by a Regional Meeting that more than fulfilled its purpose.

LA PRESSE MEDICALE

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EASTERN REGIONAL MEETING TO BE HELD IN NEW HAMPSHIRE

A meeting of the Eastern Regional Division of the United States Section, International College of Surgeons, will be held at The Balsams, Dixville Notch, New Hampshire, on July 1-6, 1957.

The schedule of arrangements and the preliminary program *follow:*

General Chairman for Sectional Meetings

Arnold S. Jackson, M.D., F.A.C.S., F.I.C.S., D.A.B., Madison, Wisconsin

Advisory Committee on Arrangements

Moses G. Behrend, M.D., F.A.C.S., F.I.C.S. (Hon.), Philadelphia, Pennsylvania
Ralph R. Coffey, M.D., F.A.C.S., F.I.C.S., D.A.B., Kansas City, Missouri
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Gilbert F. Douglas, M.D., F.A.C.S., F.I.C.S., D.A.B., Birmingham, Alabama
Earl J. Halligan, M.D., F.A.C.S., F.I.C.S., Jersey City, New Jersey
Ross T. McIntire, M.D., F.A.C.S., F.I.C.S. (Hon.), D.A.B., Chicago, Illinois
Curtice Rosser, M.D., F.A.C.S., F.I.C.S., D.A.B., Dallas, Texas

General Chairman

M. Leopold Brodny, M.D., F.A.C.S., F.I.C.S., D.A.B., Boston, Massachusetts

Program Committee

General Surgery

Archibald J. Douglas, M.D., F.A.C.S., F.I.C.S., D.A.B.
Walter J. J. Nero, M.D., F.A.C.S., F.I.C.S., D.A.B.
Omar T. Pace, M.D., F.A.C.S., F.I.C.S., D.A.B.
David W. Wallwork, M.D., F.A.C.S., F.I.C.S., D.A.B.

Obstetrics and Gynecologic Surgery

Daniel Abramson, M.D., F.A.C.S., F.I.C.S., D.A.B.
Robert H. Goodwin, M.D., F.A.C.S., F.I.C.S., D.A.B.
James André Lamphier, M.D., F.A.C.S., F.I.C.S., D.A.B.
Timothy A. Lamphier, M.D., F.A.C.S., F.I.C.S., D.A.B.
William A. Lynch, M.D., F.A.C.S., F.I.C.S., D.A.B.
Philip P. McGovern, M.D., F.I.C.S., D.A.B.

Neurologic Surgery

Joseph F. Dorsey, M.D., F.A.C.S., F.I.C.S., D.A.B.

Proctologic Surgery

Gaspar Angelo, M.D., F.I.C.S., D.A.B.
John F. Keane, M.D., F.I.C.S., D.A.B.

Otorhinolaryngologic Surgery

Edward A. Abbot, M.D., F.I.C.S., D.A.B.
Byron H. Porter, M.D., F.I.C.S., D.A.B.
Oscar Rodin, M.D., F.I.C.S., D.A.B.
Samuel Segal Jr., M.D., F.I.C.S., D.A.B.
John A. Failla, M.D., F.I.C.S., D.A.B.

Orthopedic Surgery

Harry A. Berman, M.D., F.I.C.S., D.A.B.
Martin Dobelle, M.D., F.I.C.S., D.A.B.
David Goldberg, M.D., F.I.C.S., D.A.B.
Garry De N. Hough Jr., M.D., F.A.C.S., F.I.C.S., D.A.B.

Ophthalmic Surgery

Sydney S. Deutch, M.D., F.A.C.S., F.I.C.S., D.A.B.

Urologic Surgery

Howard A. Hoffman, M.D., F.A.C.S., F.I.C.S., D.A.B.
Norman L. Wilson, M.D., F.A.C.S., F.I.C.S., D.A.B.

Woman's Auxiliary

Honorary Chairmen

Mrs. Max Thorek, Chicago, Illinois
Mrs. Edwin Speidel, Providence, Rhode Island

United States Section

Chairman: Mrs. Clifton L. Dance, Brooklyn, New York
Mrs. Earl I. Carr, Lansing, Michigan
Mrs. Charles B. Kelley, Tenafly, New Jersey
Mrs. Robert LeSage, Dixon, Illinois

Local Committee

Chairman: Mrs. M. Leopold Brodny, Brookline, Massachusetts
Mrs. Henry Cabitt, Newton, Massachusetts
Mrs. Joseph F. Dorsey, Belmont, Massachusetts
Mrs. S. Charles Kasdon, Boston,
Mrs. John F. Keane, Newton, Massachusetts
Mrs. George C. Robbins, Brookline, Mass.

SCIENTIFIC PROGRAM

Tuesday, July 2

Morning Session

Presiding: Howard A. Hoffman, M.D., F.A.C.S., F.I.C.S., D.A.B., New Bedford, Massachusetts
Secretary: Clarence M. Hawke, M.D., F.A.C.S., F.I.C.S., D.A.B., Harrisburg, Pennsylvania

Surgical Motion Picture 9:15-9:45 a.m.

Medical Economics

Saving Income Taxes by Short-Term Trusts 9:45-10:30 a.m.

A. W. Ormiston, B.A., LL.B., President, A. W. Ormiston Company, Chicago, Illinois

Question Period 10:30-10:45 a.m.

Intermission 10:45-11:00 a.m.

Plastic Surgery

Psychologic Problems in Plastic Surgery 11:00-11:30 a.m.

Malvin F. White, M.D., D.M.D., Assistant Professor of Surgery, Tufts University Medical School; Instructor in Surgery, Harvard Medical School, Boston, Massachusetts

Woman's Auxiliary Lecture

Adrenal Response to Trauma 11:30-12:30 p.m.

W. F. Walker, M.D., Ch.B., F.R.C.S., F.R.C.S.E., Lecturer in Surgery, Queens College, Dundee, Scotland; Research Fellow in Surgery, Peter Bent Brigham Hospital, Boston, Massachusetts

Luncheon 12:30-2:00 p.m.

Afternoon Session

Presiding: Daniel Abramson, M.D., F.A.C.S., F.I.C.S., D.A.B., Brookline, Massachusetts

Secretary: Robert H. Goodwin, M.D., F.A.C.S., F.I.C.S., D.A.B., New Bedford, Massachusetts

The Principle and Art of Medical Illustration 2:00-3:00 p.m.

Frank Netter M.D. (Courtesy, Ciba Company)

Roentgenography

Uterotubographic Studies in Habitual Abortion 3:00-3:30 p m.

Samuel A. Robins, M.D., F.A.C.R., D.A.B., Professor of Radiology, Tufts University Medical School, Boston, Massachusetts

Intermission 3:30-3:40 p.m.

Gynecologic Surgery

Sterility in Women 3:40-4:00 p.m.

Gilbert F. Douglas, M.D., F.A.C.S., F.I.C.S., D.A.B., Associate Professor of Clinical Gynecology, Medical College of Alabama; Vice-President, United States Section, International College of Surgeons; Member of the International Executive Council of the International College of Surgeons, Birmingham, Alabama

Interposition of Uterine Ligaments Following Vaginal Hysterectomy in 100 Cases with Stress Incontinence of Urine 4:00-4:20 p.m.

S. Charles Kasdon, M.D., F.A.C.S., D.A.B., Assistant Professor of Obstetrics and Gynecology, Tufts University Medical School, Boston, Massachusetts

Obstetric Surgery

The Management of Toxemia of Pregnancy 4:20-4:40 p.m.

August F. Daro, M.D., F.I.C.S., D.A.B., Professor of Obstetrics, Cook County Post-Graduate School of Medicine, Chicago, Illinois

Endocrine Functions of Human Placenta 4:40-5:00 p.m.

Philip Troen, M.D., D.A.B., Instructor in Medicine, Harvard Medical School; Senior Instructor in Medicine, Tufts University Medical School, Boston, Massachusetts

The Primiparous Breech: Its Practical Management During Labor 5:00-5:20 p.m.

Benjamin F. Bornstein, M.D., D.A.B., Consultant Obstetrician, New England Hospital; Associate Visiting Obstetrician, Beth Israel Hospital; Associate Visiting Gynecologist, Beth Israel Hospital; Associate Obstetrician, Faulkner Hospital, Boston, Massachusetts

Discussion 5:20-5:30 p.m.

Herschel Heinz, M.D., F.I.C.S., Obstetrician-in-Chief, St. Luke's Hospital, New Bedford, Massachusetts

Wednesday, July 3
Morning Session

Presiding: Joseph F. Dorsey, M.D., F.A.C.S., F.I.C.S. D.A.B., Boston, Massachusetts

Secretary: Nicandro F. DeCesare, M.D., F.I.C.S., Lawrence, Massachusetts

Surgical Motion Picture

Simple Method of Cranioplasty 9:15-9:45 a.m.

Joseph F. Dorsey, M.D., F.A.C.S., F.I.C.S., D.A.B., Instructor in Neurosurgery, Tufts University Medical School, Boston, Massachusetts

Medical Economics

The Status of Common Stock in a Physician's Financial Program 9:45-10:30 a.m.

Edward N. McMillan Jr. — Merrill Lynch, Pierce, Fenner & Beane

Question Period 10:30-10:45 a.m.

Intermission 10:45-11:00 a.m.

Orthopedic Surgery

Evaluation of Posture and Asymmetrical Legs in Relation to Back Pain 11:00-11:10 a.m.

Herbert P. MacNeal, M.D., F.I.C.S., D.A.B., Veterans Administration Hospital, Manchester, New Hampshire

The Treatment of Fresh Fractures of the Neck of the Femur with Intramedullary Stem-Prostheses 11:10-11:30 a.m.

A. A. Savastano, M.D., F.I.C.S., D.A.B., Consulting Orthopedic Surgeon, University of Rhode Island, Providence, Rhode Island

The Newer Developments in Orthopedic Surgery 11:30-12:00 a.m.
Edward L. Compere, M.D., F.A.C.S., F.I.C.S. (Hon.), D.A.B., Professor and Chairman, Department of Orthopedic Surgery, Northwestern University Medical School; President-Elect, United States Section, International College of Surgeons; Chairman, International Section, Orthopedic Surgery, International College of Surgeons; Secretary, Qualification and Examination Council, International College of Surgeons, Chicago, Illinois

Symposium
Management of Neck, Shoulder and Arm Pain 12:00-12:30 a.m.
Moderator: **Edward L. Compere**, M.D., F.A.C.S., F.I.C.S. (Hon.), D.A.B., Professor and Chairman, Department of Orthopedic Surgery, Northwestern University Medical School, Chicago, Illinois
Charles Bradford, M.D., Consulting Orthopedic Surgeon, Faulkner, Milton, Mt. Auburn Hospitals and Massachusetts Hospital for Crippled Children, Boston, Massachusetts
Joseph F. Dorsey, M.D., F.A.C.S., F.I.C.S., D.A.B., Instructor Neurosurgery, Tufts University Medical School, Boston, Massachusetts
Samuel S. Hanflig, M.D., D.A.B., Instructor, Orthopedic Surgery, Tufts University Medical School; Instructor in Surgery, Harvard Medical School, Boston, Massachusetts
Luncheon 12:30-2:00 p.m.

Afternoon Session

Presiding: **George Stanley Miles**, M.D., F.A.C.S., F.I.C.S., Somerville, Massachusetts
Secretary: **George Robbins**, M.D., F.I.C.S., Boston, Massachusetts

Hospital Architecture
Hospital in the Round: A New Concept in Design 2:00-2:45 p.m.
Joseph L. Eldredge, A.I.A., Boston, Massachusetts

Question Period 2:45-3:00 p.m.
"What's New" 3:00-3:10 p.m.
M. Leopold Brodny, M.D., F.A.C.S., F.I.C.S., D.A.B., Assistant Professor of Urology, Tufts University Medical School; Regent of Massachusetts, United States Section, International College of Surgeons, Boston, Massachusetts

Urologic Surgery
Arteriovenous Aneurysm of the Kidney 3:10-3:30 p.m.
Hamilton Fontoura, M.D., Rio de Janeiro, Brazil; **Howard A. Hoffman**, M.D., F.A.C.S.,

View of The Balsams. The Switzerland of America, Dixville Notch, New Hampshire, where the Eastern Division of the International College of Surgeons will hold its annual scientific, educational and recreational meeting July 1-6, 1957.

Director, International College of Surgeons, Chicago, Illinois

The Mechanical Transmutation of Modern Life—Charles Bradford, M.D., Boston, Mass.

Dancing 10:00-Midnight

Thursday, July 4

Men's Golf Tournament

Independent Activities: Tennis, swimming, pingpong, boating, bowling, fishing

"Kaffee Klatsch" 10:00-11:00 a.m.

Meeting of Regents and Officers of the International College of Surgeons

Gaucho Barbecue,
Lake Gloriette Terrace 2:00 p.m.

Entertainment

Buffet Francais 7:00-9:30 p.m.

Introduction of international guests

Award of golf prizes

Hypnosis: Fact and Fancy (motion picture demonstration)

Benjamin Simon, M.D., D.A.B., Director, Ring Sanatorium, *Arlington Heights; Consultant* in Psychiatry, Veterans Administration Hospital, Bedford, Massachusetts

Dancing 11:00-Midnight

Friday, July 5

"Kaffee Klatsch,"
Upper Lobby 10:00-11:00 a.m.

Bridge, Bingo, Putting Contest,
Horse Racing 2:00-5:00 p.m.

Cocktail Party (courtesy of the Desitin Chemical Company) 6:00-7:00 p.m.

Dinner 7:00-10:00 p.m.

Chairman: M. Leopold Brodny, M.D., F.A.C.S., F.I.C.S., D.A.B., Regent for Massachusetts, Boston, Massachusetts

Guests of Honor: Edwin Speidel, M.I.C.S. (Hon.), Providence, Rhode Island, and Robert E. Gross, M.D., F.A.C.S., D.A.B., Wm. E. Ladd Professor of Children's Surgery, Harvard Medical School, Boston, Massachusetts

The President's Message: Curtice Rosser, M.D., F.A.C.S., F.I.C.S., D.A.B., President, United States Section, International College of Surgeons, Dallas, Texas

The Edwin and Hanna Speidel Award: Edwin Speidel, M.I.C.S. (Hon.)

Recipient: Robert E. Gross, M.D., F.A.C.S., D.A.B.

Farewell Dance 10:00-Midnight

WELCOME

A cordial invitation is extended to members of the surgical and allied professions and their friends to attend the meeting, which will be a scientific, educational and recreational meeting, with something of interest to all. It will commence with registration on Monday, July 1, from 1 to 5 p.m. and terminate at noon on Saturday, July 6.

The scientific sessions will emphasize the latest developments in the surgical specialties.

The Balsams is a world famous resort and has been called the "Switzerland of America." It is located in an evergreen valley, surrounded by towering mountains on the edge of Lake Gloriette. Adjoining the hotel there is a perfectly-kept eighteen-hole golf course designed by Donald Ross. Its facilities during this holiday period are for the exclusive use of our members and guests.

We urge you to bring your wife and enjoy our New England hospitality. The Woman's Auxiliary will entertain the ladies with a program of special events. This is a holiday meeting and includes Independence Day. Reservations should be made before June 1 with the Beacon Travel Service, 145 Beacon Street, Boston 11, Massachusetts.

Scientific presentations will begin and end on time.

Every physician attending must be registered. Physicians who are not Fellows of the College may attend the scientific sessions on payment of the same registration fee, $10.

When in Chicago, visit the Hall of Fame and the School of the History of Surgery and Related Sciences of the International College of Surgeons at 1516-1524 Lake Shore Drive, Chicago 10, Illinois.

NEW YORK STATE SURGICAL DIVISION

The New York State Section of the International College of Surgeons anticipates a record attendance for its second meeting at Whiteface Inn, Lake Placid, New York, on May 30 and 31 and June 1. As of April 1, the Whiteface Inn at Lake Placid reports over 350 doctors registered. Since the club can accommodate 500 with facilities at a club next door, and since at least 500 can stay at the Lake Placid Club, which is also reserved for the occasion, ample space is assured. This being a busy holiday weekend, however, Dr. James P. Fleming advises early reservations.

Dr. Max Michael Simon, F.A.C.S., F.I.C.S., Regent for New York State Chapter and Co-Chairman of Program Committee.

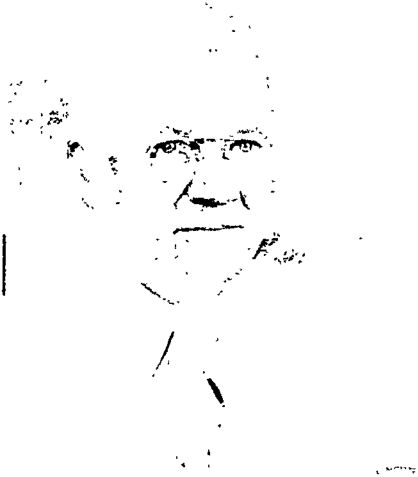
An unusually attractive program has been planned for the ladies. Through the efforts and good offices of Mrs. James P. Fleming and the kind assistance of Dr. and Mrs. Lanpher C. Weston of Massena, New York, the following schedule has been arranged.

There will be an "arrival breakfast" on Friday at 9 a.m. This will be followed by a 21-mile trip on a modern lake steamer that accommodates 120 persons, with side trips to the "North Pole," Santa Claus Village and the animal farms, which will be of special interest to the children. There will be a trip to the top of Whiteface Mountain, from which one is able to see four states.

On Friday evening there will be a motion picture on the development of the St. Lawrence Seaway, which is now under construction. A tour of the Seaway has been arranged for Saturday.

A professional golfer will be on hand to arrange a daily golf tournament. A heated swimming pool will be available, as well as bowling in a new bowling hall and horseback riding for those who desire it.

Each evening there will be a social and cocktail hour before dinner sponsored by



Dr. James P. Fleming, F [illegible] Chai ments in both military medicine and surgery and his position among the leaders in neurosurgery in civil life. He was among those who founded the first Naval Reserve Medical Units at the Mayo Clinic, and in World War II he served as chief of surgery at the U. S. Naval Hospital in Corona, Calif. and at the National Naval Medical Center in Bethesda, Maryland.

In 1945 he was appointed director of the Graduate Training Program in the Bureau of Medicine and Surgery of the Department of the Navy in Washington, D.C. In the same year he was promoted to the grade of rear admiral—the first physician from civil life to attain that grade in the history of the Navy. In 1952-1953 Dr. Craig was president of the Association of Military Surgeons of the United States.

Dr. Craig is the author of some 290 medical papers and chapters in monographs or systems of medicine, and he devised a headrest, which bears his name, that is widely used in neurosurgical operations. In 1937 he was awarded the honorary degree of doctor of science from Ohio Wesleyan University.

Dr. Greenhill Honored by France

Dr. J. P. Greenhill, F.A.C.S., F.I.C.S., eminent Chicago gynecologist and obstetrician and a devoted Fellow of the International College of Surgeons, has been awarded the Croix de Chevalier of the French Legion of Honor for his notable contributions to medical and surgical science. The award was presented by M. Jean Strauss, French Consul-General of Chicago.

Dr. Greenhill, a graduate of Johns Hopkins, was formerly a member of the faculties of Northwestern and Loyola Universities and chief resident physician at Chicago Lying-In Hospital. He is now attending obstetrician at Michael Reese hospital, professor of gynecology at the Cook county graduate school of medicine, and attending gynecologist at County Hospital. He is a charter member of the American Academy of Obstetrics and Gynecology, the Central Association of Obstetricians and Gynecologists, the American Board of Obstetricians and Gynecologists, the American Society for the Study of Sterility, and the International Fertility Society.

In addition to writing many textbooks, Dr. Greenhill has published medical articles in English, French, Spanish, Portuguese, German, Italian, and Greek journals.

Professional Journal Salutes Dr. Lundy

Dr. John S. Lundy, F.I.C.S., founder of the Section of Anesthesiology at the Mayo Clinic and Professor of Anesthesiology in the Mayo Foundation Graduate School, University of Minnesota, is the subject of a two-page tribute in the January-February issue of *Analgesia and Anesthesia*, official organ of the International Anesthesia Research Society.

Dr. Lundy introduced pentothal sodium for clinical practice in 1934, and was the first to use radioactive pentothal. He established the first blood bank in 1935, and the first postanesthesia recovery room in 1942. He organized the Anatomy Department of the Mayo Clinic and Mayo Foundation in 1927, and supervised it until 1947. He has written a textbook entitled "Clinical Anesthesia" and an almost endless number of papers, book reviews, editorials and abstracts. He established *Anesthesia Abstracts*, and has been editor of the Section on Pain of *The Journal-Lancet* since 1952.

Honorary Fellow to Address Neurosurgical Congress

Dr. Ernest Sachs, F.I.C.S. (Hon.) of Parma, Ohio, will deliver the principal address at the First International Surgical Congress in Brussels, Belgium, in July 1957. The occasion is the centennial anniversary of Sir Victor Horsley.

Woman's Auxiliary

PRESIDENT'S MESSAGE

Getting Acquainted

Mrs. Clifton L. Dance

Our page in the March-April *Bulletin* was planned to acquaint the members with their officers and various committees. In this issue I should like to introduce your Regional Vice-Presidents.

In a sense, the Regional Vice-President in your section of the country is your particular representative, and she can best serve her Section and you if you make yourself known to her. For instance, permit me to quote from an excellent report made by **Mrs. V. T. DeVault** on the Regional Meeting held at the famous Greenbrier Hotel in White Sulphur Springs, West Virginia. Mrs. DeVault is one of the Regional Vice-Presidents for the Mid-Atlantic Section, and she represented the Woman's Auxiliary at this meeting. She writes:

"Surgeons' wives from the Gulf of Mexico to the Great Lakes and from the Atlantic Ocean to west of the Mississippi River came together, renewed old friendships and made new ones. The General Chairman for the Woman's Auxiliary was **Mrs. Elbyrne Gill**, who, with her co-chairmen, **Miss Jean Gill, Mrs. Francis McGovern, Mrs. Charles Easley, Jr., Mrs. J. G. Jantz, Mrs. Andrew F. Giesen, Mrs. Edgar W. Weaver** and **Mrs. George Bourne** welcomed the ladies who attended (about 100) and arranged for them to enjoy the events that had been planned.

"A tour through this fabulous hotel delighted both the homemakers and the party-givers among us; from the stainless steel kitchens, so efficiently run, to the wing where President Eisenhower met the Canadian Prime Minister. For those who liked bridge and canasta, events were arranged with prizes for each table. Many availed themselves of the curative baths and massages, while the out-of-doors ladies had walks, golf and auto trips to nearby points of interest. The shopper is always with us, and the lovely Greenbrier shops were a delight. Some of our more studious women attended the doctors' lectures. The Auxiliary will be happy to learn that we have gained new members from this fine group."

We are most grateful to Mrs. DeVault, for her report shows that the Regional meetings are a golden opportunity for surgeons to combine a few days of change and rest with the continuous study imposed by their dedicated profession. For our women, these meetings are also far more than a vacation at a delightful hostelry. We meet other women toward whom we feel a collective kinship, a warmth and satisfaction that enrich these particular holidays, because we know that our husbands also find a rewarding satisfaction in these "get-togethers" and discussions with their colleagues.

The Regional Meetings bring the College to you, wherever you are located. There are no "remote Sections." The State Regents of the College have been planning these meetings in such charming and historically interesting places that the location itself becomes an added attraction. By the time this article sees print, the next Regional Meeting (April 7-10, 1957) of the Great Lakes Division and the Indiana State Section will have taken place. **Dr. Andrew Bowen**, Regent for Kentucky, has scheduled this meeting at another magnificent hotel, the French Lick Sheraton, French Lick, Indiana. alifornia State Chapter will h at about the same time (April 8-9) in Las Vegas, Nevada.

The New York State Section will hold its meeting from May 30 to June 2, 1957, and for this you still have time to register and to include in your holiday week-end plan. **Dr. Horace E. Ayers**, Regent for the State of New York, has arranged the event in conjunction with our Canadian sections in Ontario and Quebec under the very able chairmanship of **Dr. James P. Fleming** of Rochester, N.Y., who is Vice-Regent for New York State Section. The scientific program has been arranged by **Dr. Max Simon** of Poughkeepsie, New York. This promises to be a most interesting and enjoyable meeting. It will take place in what is known as the Adirondack's finest resort hotel, in that breath-taking spot called Whiteface Inn on Lake Placid. **Dr. Ayers** always manages to stir up enthusiasm for his meetings, and this is true of the planning done by the women as well. Women of the metropolitan area will have a splendid opportunity to meet women from such upstate cities as Albany, Buffalo, Cohoes, Massena, Niagara Falls, Poughkeepsie, Rochester, Syracuse, Tonawanda, Troy and Utica, as well as the special opportunity of meeting the ladies from Canada.

Mrs. James P. Fleming is chairman of the Woman's Program and has as her co-chairmen **Mrs. John G. Mussio** and **Mrs. Max M. Simon.** They will be assisted by a committee of women representing the cities mentioned above.

The long holiday week-end from July 1 to 5 is a wonderful time in New England. **Dr. M. Leopold Brodny**, Regent for Massachusetts, and his committee have arranged this year to hold their third annual Northeastern Sectional meeting in the heart of the White Mountains, at a celebrated resort—The Balsams, in Dixville Notch, New Hampshire. The facilities of this famous hotel, for the duration of the meeting, are for the exclusive use of our members, their families and their guests.

Those of us who have attended other meetings of this section will need no persuasion to attend. **Mrs. M. Leopold Brodny** keeps pace with her husband's splendid program, and she manages to make every such meeting a typical New England treat. You still have time to register and plan to attend. The Woman's Auxiliary will maintain a courtesy desk in the lobby of The Balsams to welcome the wives of members and other visiting ladies. Registration will take place here on Monday, July 1, 1 to 5 p.m. There is no registration charge for women.

The Auxiliary is planning many exciting things for the Dixville Notch meeting (see program and schedule of activities, pp. 35-40). The keynote of the meeting is a triple one; instruction, inspiration and entertainment. Since the assembly is open to all surgeons, it is suggested that each member of the Auxiliary invite a friend whose husband is a surgeon but not yet a Fellow of the College, the stature and position of which in the surgical world can thus be judged at first hand.

Usually it is the wife of the chairman of these Regional Meetings who plans and carries out the Woman's Program. She works in close cooperation with the Chairman's Scientific Program, and she is in the best possible position to do so. This is a job that has grown each year, and, although the planning and responsibility are hers, she needs and welcomes assistants and the help of Woman's Auxiliary members in her section of the country.

A list of the Regional Vice-Presidents of our Auxiliary appears on p. 32. They would be happy to hear from members. If you have a question about the activities, write to them. Reports of your activities in connection with the College are always *news* that would be welcomed. Please keep this list and the list of the officers from the March-April *Bulletin* for reference.

Our potential ability to further the aims of the College and to be of real value to our parent organization is increased in proportion to our active enthusiasm and strong membership.

—*Catherine M. Dance*

COSTA RICA SECTION

At a recent meeting of the Costa Rica Section of the International College of Surgeons, the following officers were elected for 1957-1958:

- **Dr. Oscar Pacheo Chaverri,** President
- **Dr. Marino Urpí Rodríguez,** Vice President
- **Dr. Edwin R. Zamora Segura, Dr. Alejandro González Luján, Dr. Esteban A. Lopez Varela,** Members of the Board of Trustees
- **Dr. Manuel Alvarez Iraeta,** Treasurer
- **Dr. José María Ortiz Céspedes,** Secretary.

FINNISH SECTION

The annual meeting of the Finnish Section of the International College of Surgeons was held in Helsinki on Feb. 8, 1957. The meeting was opened by **Prof. Väinö Seiro,** F.I.C.S., and the following new officers were elected:

Prof. Dr. A. R. Klossner, F.I.C.S., Professor of Surgery at the University of Turku, President

Prof. Dr. Paavo Vara, F.I.C.S., Professor of Obstetrics and Gynecology, University of Helsinki, Vice President

Dr. O. Peräsalo, F.I.C.S., Lecturer in Surgery at the University of Helsinki, Secretary

Dr. Lauri Aro, F.I.C.S., Lecturer in Anesthesiology at the University of Helsinki, Treasurer.

The new President, **Prof. Klossner,** thanked the meeting for the trust placed in him. He proposed a vote of thanks to the Past President, **Prof. Väinö,** for his work. The meeting recommended to the Head Section that the names of new members be submitted for their approval.

The following papers were read: by **Prof. Dr. K. R. Inberg,** "Complete Rectal Prolapse," and by **Dr. Harry E. Blomqvist,** "Acute Perforations of the Stomach and Duodenum." **Dr. C. von Numers** described his studies of the Early Diagnosis of Carcinoma of the Uterine Cervix.

The Annual Report (which was presented) showed that within the year Prof. Väinö had been nominated an honorary Fellow of the International College of Surgeons. At the meeting on Oct. 13, **Dr. M. J. Karvonen,** a guest, had read a paper on experiments made on the Function of the Lungs. **Dr. M. Sulamaa** had surveyed the possibilities of the treatment of Hermaphrodites. The Annual Meeting was followed by a banquet.

FRENCH SECTION

The next Congress of the French Section of the International College of Surgeons will be held at Reims on May 23-26, 1957, under the leadership of **Dr. J. Bouvier,** President of the Section.

There will be a permanent secretary at the Cercle Colbert, 4, rue Noël, near the railway station, where registration may be effected between 9 a.m. and 8 p.m., at which time there will be a dinner meeting at Cercle Colbert. A brief address on the history of Reims will be given by Prof. J. Bouvier, with transparencies showing the city and its monuments. Projections and talk on the famous stained-glass windows of the Reims Cathedral will be offered by

M. L. Mary and commented upon by **M. J. Simon,** expert on stained glass.

The Congress will be opened by President Bouvier on Friday, May 24. A résumé of the preliminary program follows:

1. Papers on Trauma, Orthopedic Surgery and Osteoarticular Entities

Dr. Thalheimer, Paris: *First Aid in Traffic Accidents*

Dr. Lambert, Liège: *Remarks on Postconcussional Syndromes*

Dr. Nicolet Berne: *Trauma of the Knee*

Drs. Robert and Jean Judet, Paris: *Surgical Treatment of Stiffness of the Knee*

Dr. Marc Iselin, Paris: *Problems in the Repair of the Flexor Tendnos*

Dr. Georg Chapchal, The Netherlands: *Degeneration of the Intervertebral Discs*

Dr. Gentin, Saint-Nazaire: *Treatment of Pseudarthrosis of the Neck of the Femur with an Acrylic Prosthesis*

Dr. René Charry, Paris: *Arthroplasty of the Hip Joint*

At 11 a.m. there will be a visit to various exhibits.

2. Motion Pictures on Various Types of Endoscopy

Drs. Caroli and Fourez, Paris: *Endoscopic Photographs with Fourez Apparatus*

Dr. J.-M. Dubois de Montreynaud and Dr. S. Segal, Reims: *Films of Endoscopies in the Surgical Service*

Dr. Palmer, Paris: *Coelioscopy*

Dr. Pergola, Paris: *Laparoscopy*

Dr. Debray, Dr. Marcel Roux, Dr. Lecanuet and Dr. Laumonier, Paris: *Diseases of the Neck of the Gallbladder*

Luncheon will be offered at 12:30, in the Pommery Caves or in the city. At 2 p.m. the following symposiums and papers will be heard.

1. Surgery of the Genitourinary Organs

Dr. Pollock, Missouri, U.S.A.: *Submammary and Periareolar Incisions in Plastic Surgery of the Nipple*

Prof. Ducassou, Algiers: *Ureteral Plastic Procedures Following Traumatic or Inflammatory Lesions of the Tube*

Dr. Muehsam, New York: *The Present Status of Treatment of Tuberculous Lesions of the Genitorurinary Organs*

Dr. Ballanger: *Vesicorenal Reflux Following Cysto-Entero Plastics*

Dr. Bret, Pau: *Genital Tuberculosis*

Dr. Lange, Nantes: *Ureterovesical Reimplantation*

Commander Pellot, Paris: *Treatment of Ruptures and Strictures of the Membranous Urethra*

Prof. Jo C. Alexander, Texas, U.S.A.: *Report of a Case of Bilateral Renal Hamartoma*

A visit to the exhibits will follow, after which the program continues.

2. Endocrinology, Biology, Cancerology

Dr. Auche, Bordeaux: *Mammography in Surgery*

Dr. Bernard, Bordeaux: *Comparative Study of the Biologic Syndromes After Surgical Castration and Normal Menopause*

Dr. Blanquet: *Cyclotron Irradiation of the Hypophysis*

Dr. Lachapelle, Bordeaux, and **Dr. Cartron,** Algiers: *Mammographies in Mastoses*

Dr. LeFèvre, Reims: *Von Recklinghausen's Disease*

At 6:30 p.m. a tea and champagne party will be given at the Old Museum of Reims (Hôtel Le Vergeur), followed by a reception by **M. René Druart,** Secretary General of the National Academy of Reims. The reception and buffet will take place at Hôtel-de-Ville (Grand Salle des Fêtes), at 9 p.m.

On Saturday, May 25, beginning at 9 a.m., the following symposiums and scientific papers will be heard:

1. Thoracic Surgery and Surgery of the Heart

Prof. Dubost, Paris: *Surgery of the Open Heart with Extracorporal Circulation*

Dr. Dubourg: *Biologic Control for Open Heart Operations*

Dr. Laborit, Paris: *Studies in Metabolism in Surgery of the Heart Under Artificial Hibernation*

Dr. Jacob Lortat, Paris: *Ulcers of the Esophagus*

Dr. Welti, Paris: *Results in Commissurotomy for Mitral Stenosis* (motion picture presentation)

Prof. Martin Lagos, Madrid: *Surgery in the Bloodless Heart*

A visit to the exhibits will intervene, after which the program will continue:

2. Visceral Surgery

Prof. Dr. Lucien Léger, Paris: *Chronic Pancreatitis*

Prof. Marcel Faure, Limoges: *Hodgkin's Disease with Localization in the Stomach, Discovered During Operation for Gastric Perforation*

Prof. Albert Jentzer, Geneva: *Surgery of* *the Esophagus*

Dr. Barbin, Nantes: *Permanent Intubation in Inoperable Carcinoma of the Esophagus*

Dr. Bouvier, Reims: *"Good" and "Bad" Gastrectomies*

At 12:30, luncheon will be served in the Pommery Caves or ad libitum.

At 2 p.m. Dr. Jerome J. Moses, of Chicago, will present *Problems in Hepatobiliary Disorders.*

After another visit to the exhibits at 4 p.m., followed at 6 p.m. by a visit to the Saint-Remi Basilica and the Cathedral, dinner will be served at the Pommery Caves at 8:30.

For Sunday, May 26, three different programs have been arranged, according to the desires of the participants.

1. Religious Services
   At the Cathedral: 8:30, 10, 11:45
   At the Temple: 10:30
2. 9-11 a.m.: Scientific Papers
   Visit to the Regional Center of Malignancies, conducted by **Prof. LeFévre**, Director
3. Visit to the Center of Thoracic Surgery at Châlons; scientific session by **Dr. Monod**

Transportation will be provided.

Other Communications

Endoscopic Films

Prof. Raymond Darget, Bordeaux: *Radium Therapy of Malignant Tumors of the Urinary Bladder*
1. *Tumors Limited to the Bladder*
2. *Infiltrating Tumors*

Prof. DeCoulx, Lille: *Fractures of the Calcaneus*

Surgery of the Genitourinary Organs

Prof. Darget and Dr. De Castelmur, Bordeaux: *An Experimental Study in Ureteral Plastics by Means of Arterial Homografts*

Dr. LeCocq, Clermont-Ferrand: *Evaluation of the Danger of Hemorrhage and Thrombo-Embolisms During Prostatectomy*

Dr. Van Keerbergen, Brussels: *Discussion of Ureteral Plastics*

Dr. Dufour, Paris: *Ureteral Plastics*
Endocrinology, Biology, Cancerology

Dr. Brenier: *Problems in the Surgery of Malignant Disease*

Prof. Darget and Dr. Lämarche, Bordeaux: *Irradiation of the Hilum of the Prostate with Radioactive Isotopes in Cancer of the Prostate*

Prof. Despons, Bordeaux, and **Dr. R. Gauducheau**, Nantes: *Lympho-Epithelioma of the Tonsil (Projections)*

Medical films will be shown without interruption during the congress, in a special room.

NETHERLANDS SECTION

The first refresher course in Anesthesiology offered in the Netherlands was held in January 1957 at Boerhaave-kwartier, Leyden, under the direction of **Dr. L. A. Boere, F.I.C.S.** A comprehensive program of instruction was given, dealing with anesthesiology in all its main aspects: its use in cardiac surgery, its relation to hypotension in general and plastic surgery, its effect upon the respiratory tract. Hypothermia was fully discussed; its induction, its biochemical aspects, its postoperative phase and its physiologic effect.

On the final day of the course a number of excellent clinical and laboratory demonstrations were given in the fields of anatomy, physiology, pathology, hemodynamics and defibrillation.

Assisting Dr. Boere as leaders of the course were **Prof. Dr. A. G. Brom, Prof. Dr. J. Mulder** and **Prof. Dr. H. A. Snellen.** Participants in the scientific program were **Dr. Sheila Anderson** (London), **Dr. L. A. Boeré, Dr. F. H. Bonjer, Dr. B. Bink, Prof. Dr. A. G. Brom, Ir. J. Bekink** (Arnhem), **Prof. Dr. R. Brinkman** (Groningen), **Prof. Dr. J. Dankmeijer, Mej. A. Dekker, W. Dekker, Dr. G. E. H. Enderby** (London), **Dr. W. R. O. Goslings, Dr. J. F. Ph. Hers, H. Labadie** (Den Haag), **Dr. A. E. Loeliger, Prof. Dr. J. Mulder, Dr. Muller Fz., Dr. J. Niekerk** (Amsterdam), **Prof. Dr. N. G. M. Orie** (Groningen), **Dr. J. D. Robertson** (Edinburgh), **Prof. Dr. H. A. Snellen, H. G. Verdonk, J. Th. Ch. Vonk** and **Dr. Voorhoeve** (Rotterdam).

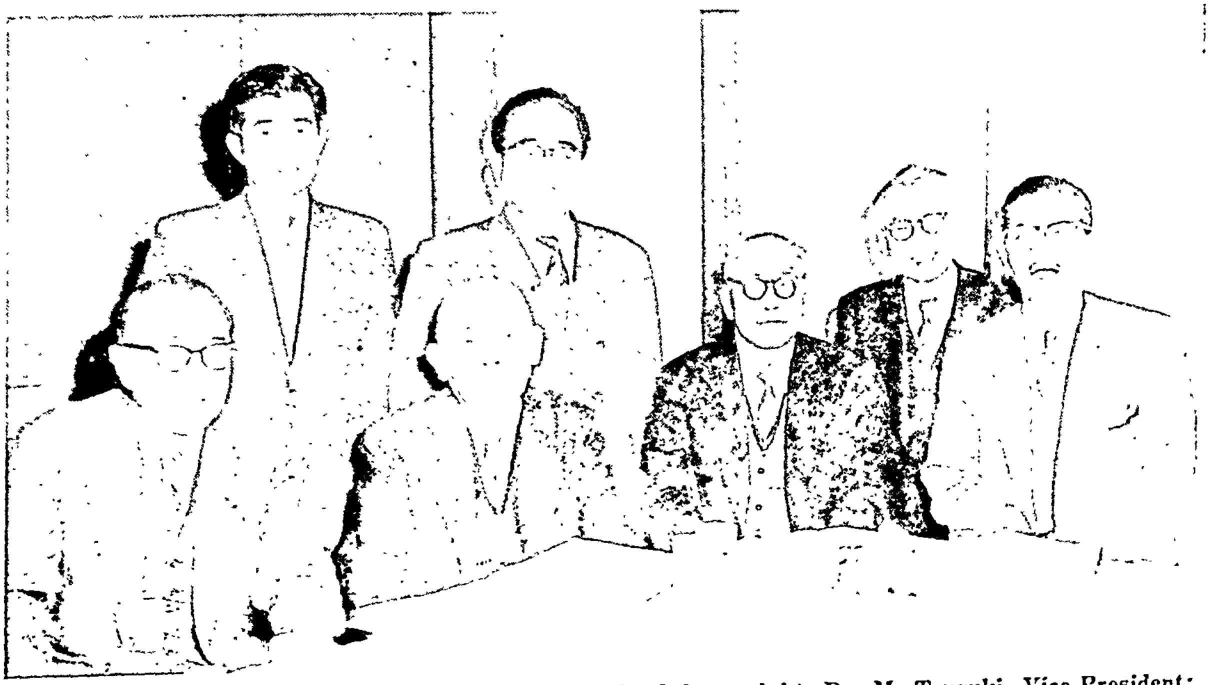
JAPAN SECTION

The following new officers have been elected by the Japan Section of the International College of Surgeons:

Dr. H. Shiota
President
Dr. M. Tsuzuki
Vice President
Dr. N. Takanashi
Vice President
Dr. Y. Ono
Vice President
Dr. K. Nakayama
Secretary
Dr. S. Kikuchi
Member of Executive Council

The Fourth Annual Congress of the Japan Section will be held at Jikeikai Medical College, Shiba Atago-cho Minato-Ku, Tokyo, on Nov. 2, 1957 (see inside front cover).

Dr. Kenneth Hui, Secretary of the Hong Kong, China Section of the International College of Surgeons, now visiting the United States, was a guest of Prof. Komei Nakayama, F.I.C.S., at Chiba University recently. He spoke glowingly of the hospitality of Prof. Nakayama. Seated, from left to right: Prof. Dr. Komei Nakayama, Dr. Kenneth Hui, F.A.C.S., F.I.C.S. Standing: Drs. Kikuchi, F.I.C.S., and Dr. Arakawa, F.I.C.S.



Newly elected officers of Japanese Section. At table, left to right, Dr. M. Tsuzuki, Vice-President; Dr. H. Shiota, President; Dr. N. Takahashi, Vice-President, and Dr. K. Nakayama, Secretary. In background, left to right, Dr. M. Morinaga, Vice-President; Dr. Y. Ono, Vice-President, and Dr. S. Kikuchi, Member of Executive Cuncil.

IN MEMORIAM

SAMUEL E. C. MOORE, M.B., M.D., F.R.C.S. (C), F.I.A.A., F.I.C.S.

Dr. Samuel Ernest Cunningham Moore of Regina, Saskatchewan, Canada, died on October 4, 1956, after a heart attack. In his passing, the Saskatchewan profession has lost a veteran member whose contribution made him a leader in medicine and whose personal qualities have endeared him to all his colleagues. Born in Collingwood, Ontario, in 1882, Dr. Moore received his public and high school education in the schools of Wiarton and Chesley, Ontario. He graduated from the University of Toronto in 1908 with the degree of Bachelor of Medicine, later obtaining the degree of Doctor of Medicine.

After two years of post-graduate study in surgery at Fordham University Hospital and Bellevue Hospital in New York City and Moses Taylor Hospital in Scranton, Pennsylvania, he established his practice in Regina in 1910.

Dr. Samuel E. C. Moore

A skilled surgeon, Dr. Moore served on the medical staffs of the Regina General and Grey Nuns Hospital and delivered over three thousand lectures to their respective schools of nursing over a period of forty-five years. His community activities included membership in the Rotary Club of Regina as well as leadership in Red Cross activities for crippled children. He represented the profession as a member of the Executive Committee of the Canadian Medical Association in 1926-27.

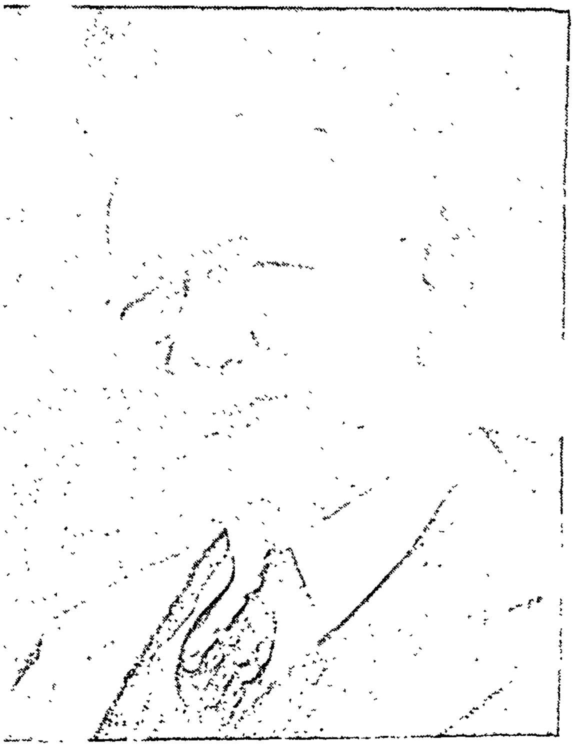
Dr. Moore was widely known for his work in the founding of the Royal College of Physicians and Surgeons of Canada and was a charter Fellow of this. He was also instrumental in the founding of the Canadian Hospital Association. In 1952 he was honored by elevation to the status of Senior Member in the Canadian Medical Assocation, and in 1953 he received a Fellowship in the International College of Surgeons during the Eightheenth Congress of the College in New York City.

Vigorous and outspoken, Dr. Moore retained his youthful enthusiasm for all good works. As a Fellow of the International College of Surgeons, his dedication to surgery and to the College ideals was equalled by the amazing energy and clear insight he brought to bear upon our activities and our problems. He will be sorely missed, not only by the community he served so well but by all the colleagues who knew and appreciated his quality.

IN MEMORIAM

JAMES ABRAHAM HILL, M.D., F.A.C.S., F.I.C.S.

Dr. Hill was born May 14, 1872, at Goliad, Texas. His father and mother ere Dr. James Theophilus Hill, a well-known pioneer doctor, and Sarah Jane 'omack Hill. He attended the public schools in Normangee, Texas, and adisonville, Texas, Texas A & M from 1891 to 1893, and Texas Medical Col- ge at Galveston for two years. He was graduated as a Doctor of Medicine om Tulane University, New Orleans, in 1900. He attended postgraduate urses at Tulane University for one year, and numerous other courses at ıding institutions, including the Mayo Clinic, throughout this country. He as Professor Emeritus of Clinical Surgery at Baylor College of Medicine, and at various times served as Chief of Surgery at Memorial Hospital and Jefferson Davis Hospital, and also as Visiting Surgeon at St. Joseph's Hospital, Hermann Hospital and St. Luke's Hospital, all of Houston.


Dr. James Abraham Hill

Dr. Hill practiced medicine in Groveton, Texas, from 1900 to 1909, and thereafter in Houston until his retirement in 1954. He then moved to Alpine, Texas, where he spent the remaining years of his life. Although Dr. Hill practiced general surgery for many years he confined the last twenty years of his practice to diseases of the thyroid gland, and he became nationally recognized as one of the nation's outstanding thyroid surgeons.

In 1903 Dr. Hill married Miss Lila Barnes of Trinity, Texas, who died in 1905. In 1923 he married Miss Fanetta Worshap of Houston, ıo passed away in 1951. Dr. Hill has two surviving sisters, Mrs. D. C. Hill Eldorado and Mrs. R. H. Yarbrough of Amarillo, as well as numerous nieces d nephews.

Dr. Hill was noted for his strong individuality, his outspoken defense of the inciples he lived by. A warm, true friend and a sympathetic healer, he ed his life with ideals and accomplishments of the highest order. He was own among his colleagues as a man of considerable diagnostic ability and a ısterful surgical technician. His many friends, his former patients and his ofessional colleagues, will miss him and remember him for years to come. s colleagues in the International College of Surgeons, to whom he has long ıce endeared himself by his warmth, geniality and devotion to the highest ofessional standards and ideals, take this means of extending heartfelt con- lence to those privileged to know him best and miss him most of all.

COLLÈGE INTERNATIONAL DE CHIRURGIENS

FOUNDED BY DR. MAX THOREK

The Journal of the International College of Surgeons

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General Surgery

Practical Observations of the Biliary Tract with Operative Cholangiography and Cholografin

MAURICE D. SACHS, M.D., D.A.B.*

CLEVELAND, OHIO

THIS article is offered in emphasis of what can be accomplished with operative cholangiographic study and the intravenous Cholografin.

Operative cholangiographic investigation is invaluable not only in the detection of calculi but in differentiation between pancreatitis and neoplasm, non-calculus obstruction, such as fibrosis of the sphincter of Oddi, and avoidance of unnecessary surgical intervention. Further, it permits a sound anatomic orientation in secondary operations.

In this technic, as in all new procedures, time and patience are needed to become expert. In addition, there is need for teamwork between the surgeon, the roentgenologist, the technician, the surgical nurse and the anesthesist. Just as more than one or two gastrectomies are needed to qualify a surgeon, so a procedure should not be judged until it has been tried repeatedly to eliminate shortcomings. In most instances these shortcomings are due to lack of experience. The extra time re-

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Read at the Twenty-First Annual Congress of the United States and Canadian Sections, International College of Surgeons, Chicago, Sept. 9-13, 1956.

Submitted for publication Sept. 23, 1956.

quired is negligible compared with the risks involved in repeated operations.

Any portable roentgen unit can be used. High milliamperage is preferable, since it permits rapid exposures. Amber rubber tubing should be fresh. When held to the light, it is easy to determine whether air bubbles are present. A ¼ inch, 22-gauge needle is used for the injection. It should be sharp, as repeated injections with a blunt needle will spoil the examination.

Any aqueous contrast medium warmed to body temperature is satisfactory. The concentration may be either 35 or 70 per cent. If the common duct is dilated, however, a dilute solution of 15 per cent is used, lest calculi be obscured.

The following routine is one that has been found satisfactory: The roentgen unit is checked and dusted before the examination. All outlets should be functioning satisfactorily. While the surgeon is scrubbing, a pillowcase is slipped over the head of the tube. A bucky or tunnel is placed on the operating table, and a foam rubber mattress is placed on either side to make the table level. The patient is then rotated 20 to 30 degrees on his right side, so that the common duct will not be obscured by the spine. The raised left side is supported by rolled sheets. If this position is awkward for the surgical team, the table can be tilted in the opposite direction until the patient is supine. If this is done, however, the roentgen tube will have to be angled accordingly, so that the rays are not cut out by the bucky. A scout film is taken to check technic, positioning and the presence of artifacts, such as rubber tubing, in the stomach. If the scout film is satisfactory, the patient is not to be moved unless the technician is informed. Adhesive tape is placed on the floor to show the position of the roentgen unit, so that time will not be lost later. Ten by 12 inch cassettes are used, and these are centered in the bucky tray by means of adhesive tape on its border. One cassette is left in position in the bucky tray for the subsequent cholangiogram. The unit is moved out of the immediate surgical field to a corner, and the technician returns to the roentgen department on call.

All drapes and towels are sewed on, so that no instrument will appear in the roentgen film. The juncture of the cystic and common ducts is exposed. The cystic duct is occluded with a rubber band. The anesthetist is alerted, and a technician is called from the roentgen department. A No. 5 ureteral catheter is inserted for 5 cm. through a transverse incision in the cystic duct. A 22-gauge needle also may be used. This is attached to fresh amber rubber tubing. Warm saline solution is injected. Keeping the system closed, the saline syringe is replaced by one containing a contrast medium. The operative field is covered with a sterile sheet. Three injections of 3 cc. each are made under physiologic conditions. Each injection requires thirty seconds. The surgeon counts the cubic centimeters aloud; respiration is suspended at the count of 3, and a roentgen exposure is made. A fourth exposure is made, 10 cc. being rapidly injected to demonstrate the intrahepatic radicles. All films are processed while the surgeon frees the gallbladder. The processed wet films are studied by the roentgenologist and the surgeon together.

If the sphincter of Oddi is narrowed, it becomes necessary to determine whether this is due to a transitory spasm. Twenty to 30 cc. of 25 per cent magnesium sulfate should be injected opposite the sphincter of Oddi and another set of films taken.

In interpretation, some pitfalls to watch for are: (1) air bubbles, usually circular uniform in size and not faceted; angulation of the common duct, caused the catheter; (3) a common duct t overlies the spine, which results in a facts mistaken for calculi; (4) a co

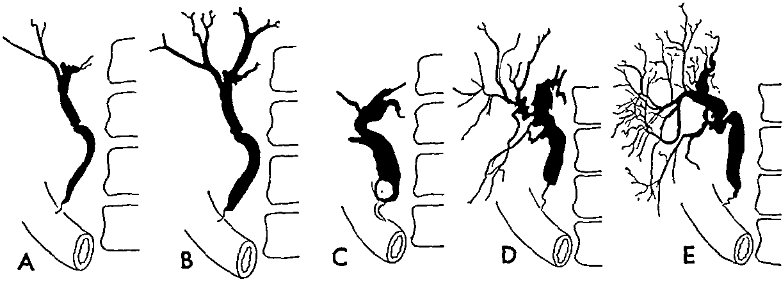

Fig. 1.—Dysfunction of sphincter of Oddi. *A*, transitory spasm; *B*, prolonged spasm; *C*, stone with associated spasm; D, inflammation with proximal dilatation; *E*, fibrosis.

mon duct occluded by large calculi (rare), and (5) spasm and sometimes false passages due to instrumentation in the common duct. (Spasm may be prevented by using magnesium sulfate before control operative cholangiograms are taken.)

Dysfunctions of the Sphincter of Oddi.—These may be classified as follows (Fig. 1): (1) transitory spasm (dyskinesia); (2) prolonged spasm (dyssynergia); (3) hypertrophy; (4) inflammation, and (5) fibrosis. This classification is a loose one, for in the majority of patients these conditions may overlap.

With transitory spasm the sphincter of Oddi segment is narrow, but there is no proximal dilatation of the common duct. With prolonged spasm the proximal portion of the common duct is slightly dilated. With persistent spasm there is stagnation of bile with the eventual formation of calculi. Hypertrophy and inflammation may then ensue. Up to this stage, the process is reversible if the cause can be removed. If not, the end result is fibrosis, with proximal dilatation of the common duct and the gallbladder.

Cholangiographic Evidence of Pancreatitis.—In 85 per cent of all patients the middle segment of the common duct traverses the posterior head of the pancreas or proceeds in a groove. Involvement of the head of the pancreas and its effect on the common duct (Fig. 2) may therefore be classified as follows: (1) lateral displacement on the middle portion of the common duct; (2) angulation between the proximal and middle segments of the common duct; (3) Proximal dilatation of the common duct, obstructive reflux of the contrast medium into the intrahepatic ducts, with eventual formation of calculi, and (4) compression of the middle portion of the common duct.

These abnormalities are observed most often during operative or intravenous cholangiographic study. If the roentgenologist maintains a high index of suspicion even during an oral study, however, a gallbladder at the upper limits of normal that fails to respond to a fat meal and is associated with proximal dilatation of the common duct should warrant further study with Cholografin.

Cholografin.—Since the introduction of Cholografin several years ago there has been a renewed interest in roentgen visualization of the biliary tract. This may have led to its injudicious use. [illegible] -lografin method is not inten[illegible] oral cholecystograp[illegible] [illegible] suppl[illegible] in which the gallbladder cannot be shown by the oral method. It serves well to demonstrate the common duct in the cholecystectomized patient and also may provide a more comprehensive understanding of the activity of the sphincter of Oddi.

According to some authorities, the liver cells absorb 90 per cent of Cholografin and the kidneys 10 per cent. If the liver is diseased, the contrast medium is excreted through the urinary system. To insure a successful examination, the serum bilirubin level should be ascertained. If this is elevated, Cholografin will not be seen in the biliary tract. Occasionally, if secretion is delayed, films taken four to six hours later can demonstrate the biliary radicles satisfactorily; such examinations, however, are not practical in a busy roentgen department.

There are those who state that a pyelo-

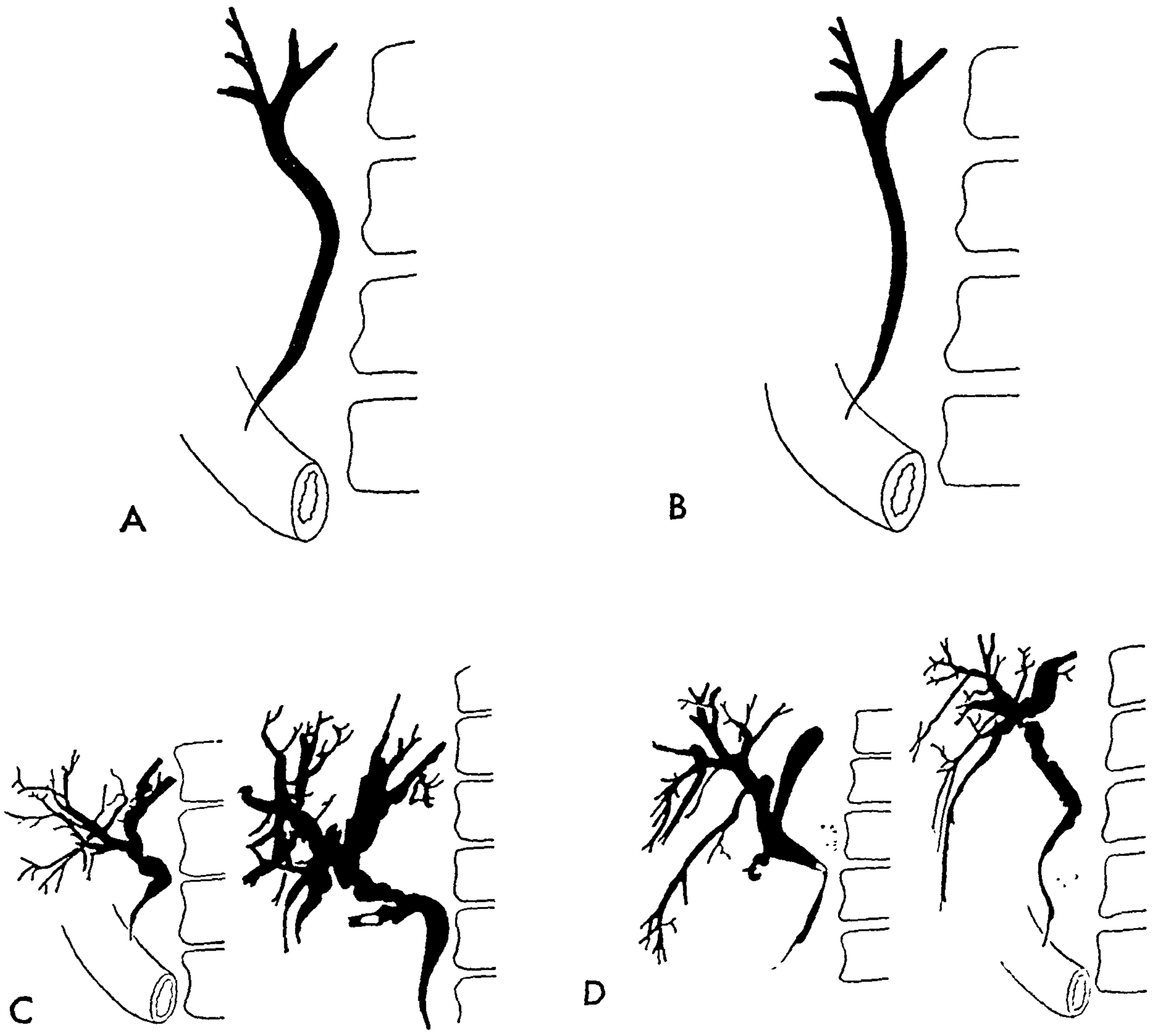

Fig. 2.—Pancreatitis. *A*, normal conditions. *B*, beginning stage; note lateral displacement of middle third segment. *C*, proximal dilatation with eventual formation of calculi. Note compression of middle (pancreatic) segment. *D*, obstructive reflux of contrast medium into intrahepatic radicles. There is interstitial calcification of head of pancreas.

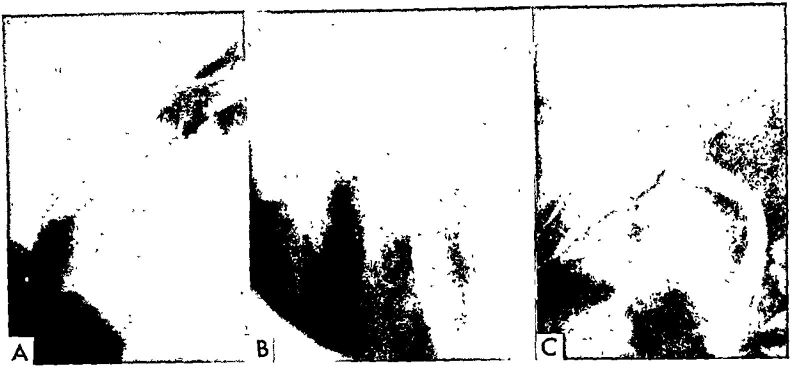

Fig. 3.—Calculi of common duct (Cholografin). *A*, distal portion of duct obscured by opaque medium in duodenum. Diameter of common duct is normal. *B*, laminogram showing several distinct calculi in distal portion of duct. *C*, operative cholangiogram confirming presence of calculi. Note difference here in diameter of common duct from appearance in intravenous and operative studies.

graphic effect is *ipso facto* an indication of damage to the liver. This is not true. The pyelographic appearance is encountered fairly frequently with no clinical or laboratory evidence of hepatic disease.

Side reactions to Cholografin are less than those observed during an intravenous urographic examination. Reactions can be controlled by a regular slow rate of injection with a stop-watch used as control. The rate should not exceed 5 cc. per minute; if 40 cc. is used, the injection should not be prolonged beyond eight to ten minutes. Of 333 patients examined with the double dose (40 cc.), 30 complained of mild nausea, 21 of nausea and vomiting and 13 of urticaria. Two hundred of this group had undergone cholecystectomy.

Cholografin is demonstrable in the biliary radicles within ten to fifteen minutes after its injection. Obviously, it is impractical to attempt routine visualization of the ductal system and gallbladder every 10 to 15 minutes for two or three hours.

It should be determined in advance, therefore, whether the emphasis is to be placed on the intrahepatic and common ducts, which are visible with fifteen minutes, with a maximum concentration in the common duct at thirty to forty-five minutes, or on the gallbladder, which appears as an area of thin veil-like density at forty-five minutes with maximum concentration at two to two and one-half hours.

Some pitfalls encountered in interpretation with Cholografin are: (1) stratification of the gallbladder due to failure of bile and dye to mix, with the result that bizarre shadows may be mistakenly interpreted as calculi; (2) air bubbles in the biliary tract after sphincterotomy, misinterpreted as stones; (3) ability of a gallbladder to function, after sphincterotomy; (4) Cholografin in the duodenal bulb or the descending portion of the duodenum, mistaken for a cystic stump; (5) calculi in the distal region of the common duct, obscured by rapid emptying of Cholografin into the duodenum (Fig. 3), and, (6) persistence of bladder shadow twenty-four to thirty-six hours later.* This contradicts certain German reports in which Cholografin is said to have been excreted by the colon within twenty-four hours and not reabsorbed.

Normal Size of the Common Duct.—A review of the literature reveals considerable variation of opinion as to the normal diameter of the common duct. In all probability each author is correct in his premise. For example, in anatomic studies, the diameter of the common duct is said to vary from 5 to 10 mm., with an average of 7.5 mm. Similar observations of the common duct have been made with operative cholangiograms. In oral cholecystograms, however, the normal common duct measures 1 to 2 mm., and in Cholografin studies it measures 5 mm. A possible explanation may be as follows: Gross anatomic studies are made after injection of a latex substance into the duct or by measuring the open duct. The taking of an operative cholangiogram, even under ideal physiologic conditions, is still a retrograde examination, and the common duct may be slightly distended during the examination. Furthermore, the drug used for preoperative medication is usually morphine. In oral cholecystographic study the common duct is seen after a fat meal. The contracted gallbladder, with its increased pressure, squirts the contrast medium in a jetlike stream into the common duct. Therefore, under normal conditions, the entire lumen of the common duct may not have been demonstrated, and the diameter will measure 1 to 2 mm. In a Cholografin study the flow and concentration of the contrast medium depends on the intrahepatic ductal pressure, which is higher than that of the common duct. Consequently, with an even flow of bile, under slightly higher pressures than that of the gallbladder, more of the lumen of the common duct will be demonstrated, and its diameter will measure 5 mm. (Fig. 4).

In all probability the true caliber of the common duct is that depicted by Cholografin, namely, 5 mm. In determining the diameter of the duct, consideration should be given to the type of examination done and the site from which measurements are made. Anatomically the duct is more constant in its middle third and all measurements should be made in this area. It is misleading to select the widest portion of the common duct for measurement purposes, which in most instances, would be at the junction of the cystic and common ducts, due to the marked variation in the insertion site.

The Common Duct After Cholecystectomy.—The normal mean diameter of the common duct before or after operation is 5 mm. The duct is never dilated unless there is an obstruction in the region of the sphincter of Oddi. Compensatory postoperative dilatation, contrary to the reports in surgical texts, does not exist (Fig. 5). By "dilatation" is meant a diameter at least 3 to 5 mm. above its original normal, not the variation of a millimeter or two, which may be due to a passive elastic type of dilatation. In a recent comparative study of Cholografin studies with routine operative cholangiograms taken during the past ten years (1946-1956) in 200 patients, not one instance of compensatory dilatation of the common duct was present. The mean diameter of the common duct in the operative cholangiograms was 7 mm., in the Cholografin study, 5 mm. Similar results were observed when preoperative Cholografin studies of the common duct were compared with the operative cholangiograms. The interval between the operative cholangiographic study and the intravenous study varied from several

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*From a practical point of view, particularly in the case of a cholecystectomized patient, a laminogram at 14 cm. should be taken.

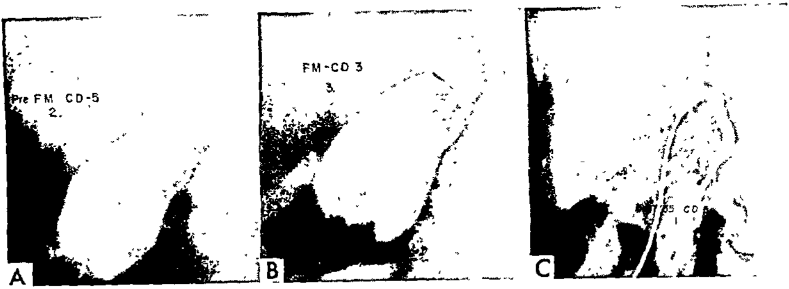

Fig. 4.—Normal measurements of common duct. *A*, film taken before fat meal. Gallbladder slightly contracted; diameter of common duct, 5 mm. *B*, film taken after fat meal. Gallbladder slightly contracted; diameter of common duct, 3 mm. *C*, operative cholangiogram; diameter of common duct, 5 mm. Distortion of common duct caused by catheter.

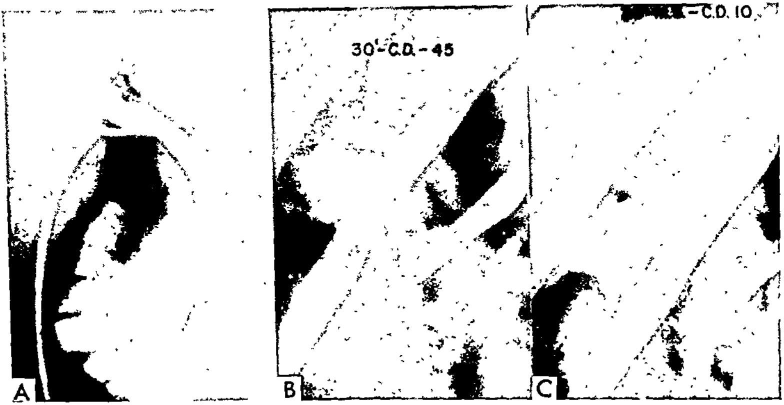

Fig. 5.—Measurements of common duct. *A*, operative cholangiogram taken in April 1953. Diameter of common duct is 10 mm. Note angulation caused by catheter. *B*, film taken with Cholografin (thirty minutes); diameter of common duct, 4.5 cm. *C*, film taken after administration of morphine sulfate (after twenty additional minutes); diameter of common duct, 10 mm. Compensatory dilatation is not present.

weeks to ten years. A detailed report, prepared in collaboration with surgical and medical associates, is nearing completion.

Owing to the prolonged action (several hours) of morphine, this drug should not be administered immediately prior to a Cholografin study, particularly if there is any question of dysfunction. An abnormal condition is created which could make it difficult to differentiate spasm from fibrosis. In a normal common duct after administration of morphine, constriction of the sphincter of Oddi segment, with minimal proximal prominence of the common duct takes place within twenty minutes. The diameter of the common duct increases by approximately 3 mm., *approximating* the operative cholangiographic measurements. The duct appears more densely opacified, and the emptying time is prolonged from one to two hours. In a patient with classical dysfunction of the sphincter of Oddi, however, the proximal portion of the common duct dilates (4 to 6 mm.), and at the same time the patient may complain of excruciating epigastric pain.

Considering the present vogue of sphincterotomy, a study and demonstration of the common duct, particularly the sphincteric segment, is desirable. Narrowing at the distal end of the common duct raises a question as to the adequacy of the sphincterotomy. Studies that involve the use of drugs seem to indicate that there may be a response of the sphincter segment, lending credence to the questionable adequacy of the sphincterotomy and the question as to whether there has been fiber regeneration.

SUMMARY

The need for operative cholangiographic study and a practical routine are discussed and outlined.

Practical facts in roentgen interpretation are emphasized.

The cholangiographic diagnoses of dysfunction of the sphincter of Oddi (spasm to fibrosis) and pancreatitis are outlined.

The practical value of a Cholografin examination, aspecially after cholecystectomy, is emphasized.

The diameter of the normal common duct and the common duct after operation are discussed in detail.

CONCLUSION

Roentgen study of the biliary tract, particularly by the operative, intravenous and oral methods, can be of invaluable help to the surgeon. By careful attention to roentgen technic and teamwork on the part of all concerned, particularly the surgeon and the radiologist, information of additional conditions such as spasm, fibrosis, pancreatitis and tumor can be obtained and proper surgical treatment planned.

RIASSUNTO

Viene messa in rilievo l'importanza della colangiografia peroperatoria come metodo di routine e l'importanza pratica della interpretazione dei radiogrammi. Viene dimostrata la possibilità di diagnosi colangiografica della malattia dello sfintere di Oddi e della pancreatite, oltre al valore dell'esame dopo colecistectomia. Un'attenzione speciale è dedicata allo studio del diametro del coledoco in condizioni normali e dopo gli interventi.

RÉSUMÉ

L'utilité de l'étude cholangiographique opératoire et d'une technique de routine est discutée.

Des faits pratiques quant à l'interprétation radiologique sont soulignés.

Les diagnostics cholangiographiques de dysfonction du sphincter d'Oddi et de la pancréatite sont exposés.

L'auteur insiste sur la valeur pratique de l'examen cholangiographique, surtout après cholécystectomie.

Il discute dans le détail les différences entre le diamètre du cholédoque normal et du cholédoque après intervention chirurgicale.

RESUMEN

Se discute la necesidad del estudio colangiográfico y una rutina práctica.

Se enfatizan hechos prácticos en la interpretación radiológica.

Se describe el diagnóstico colangiográfico de malfuncionamiento del esfínter de Oddi (espasmo ó fibrosis) y pancreatitis.

Se enfatiza el valor prático de un examen con cholografin, especialmente después de colecistectomía.

Se discute en detalle el diámetro del cloédoco normal y el del colédoco des pués de la operación.

ZUSAMMENFASSUNG

Der Bedarf für operative cholangiographische Untersuchungen und deren praktische routinemässige Ausführung werden erörtert.

Praktisch wichtig Punkte in der Deutung der Röntgenbilder werden hervorgehoben.

Die cholangiographische Diagnose der fehlerhaften Funktion des Sphincter Oddi (von Krampfzuständen bis zur Fibrose) und der Bauchspeicheldrüsenentzündung wird umrissen.

Der Wert der Untersuchung mit Cholografin besonders nach Gallenblasenresektion wird betont.

Auf die Erörterung des Durchmessers des normalen Choledochus und desselben nach Operation wird besonders eingegangen.

SUMARIO

Discute a necessidade a execução prática da colangiografia operatória. Os aspectos praticos de interpretação radiografica são ressaltados. O diagnóstico colangiografico da disfunção do esfincter de Oddi (do espasmo à fibrose) e a pancreatite são motivo de explanação. O A. salienta o valor pratico da Colangiografia com Cholografin especialmente apos a colecistectomia. O diametro do coledoco antes e depois da operação merecem comentarios especiais.

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I have found that, with some natures, it would pain and perplex their moral anatomy to move direct to an object. Like snakes, they seem formed to take pleasure in indirect motion; with them the true line of moral beauty is a curve.

—*Vauvenargues*

Fatal Massive Gastrointestinal Hemorrhage Due to Multiple Phlebectasia of the Small Intestine

Report of a Case

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IN the April 1956 issue of the *Journal of the International College of Surgeons* I reported a fatal instance of such an accident, the patient being an 83-year-old man with an entirely normal gastrointestinal history.[1] In case to be reported here, the diagnosis was complicated by two previous operations for duodenal ulcer in a *young* patient, a man aged 34.

Uncontrollable massive gastrointestinal hemorrhage due to bleeding from venous varicosities (phlebectasia) in the wall of the small intestine is a rare condition. When bleeding from the upper gastrointestinal tract occurs, the two principal and most usual causes must first be considered. These are benign or malignant ulcers of the stomach or duodenum and ruptured esophageal varices secondary to portal hypertension. Of less importance is the likelihood of hemorrhage from the rarer tumors of the small bowel, such as adenomas, fibromas, hemangiomas, myomas, and neurofibromas. A fourth possibility to be excluded is bleeding into the duodenum resulting from erosion of an artery by calculus in the wall of the common bile duct. That such a chain of events can produce exsanguination is evidenced by the cases described by Rabinovitch and his collaborators.[2]

REPORT OF CASE

W. L., a 34-year-old Negro, had been operated upon at Cumberland Hospital, Brooklyn, New York, thirteen months prior to admission to this hospital, for a perforated duodenal ulcer. The procedure consisted of simple closure of the perforation. This had been followed by gastrojejunostomy and vagotomy one month later. On the day before admission to the Cumberland hospital he complained of sudden, generalized abdominal pain, vomited a large quantity of dark blood and passed one tarry stool.

Examination revealed him to be in acute distress. He was severely dehydrated. The blood pressure, in millimeters of mercury, was 80 systolic and 50 diastolic. The pulse rate 98; the beat was regular and of fair quality. There were 24 respirations per minute.

The abdominal skin presented two healed longitudinal operative scars. The abdomen was extremely rigid and tender in all quadrants. Bowel sounds were audible throughout. The right upper quadrant was tympanitic. No masses or organs could be palpated.

Laboratory examination revealed the erythrocyte count to be 7,240,000 per cubic millimeter of blood, with 18.7 Gm. of hemoglobin, or 112 per cent. The hematocrit reading showed 70 per cent of packed erythrocytes. The leukocyte count was 19,650 per cubic millimeter of blood, with 19 per cent segmented polymorphonuclear cells, 71 per cent stab cells, and 10 per cent lymphocytes. A roentgenogram of the abdomen, a "flat plate" without barium ingestion, showed fluid in the small bowel. A roentgen diagnosis of intestinal obstruction of undetermined origin was made by the roentgenologist.

The patient's course in the hospital was pro-

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gressively downhill. A nasogastric (Levine) tube connected to a Wangensteen suction machine was inserted, and the patient was treated for shock. He was placed in an oxygen tent. While his blood was being typed and cross-matched, electrolytes, Levophed, and blood plasma were administered intravenously to restore blood volume and maintain blood pressure.

About two and one-half hours after admission the patient vomited 1,000 cc. of bright red blood. He complained of thirst and cramping in both legs. The blood pressure, in millimeters of mercury, immediately dropped to 55 systolic and 30 diastolic, and the abdomen became much softer. In spite of blood transfusion under pressure, however, the blood pressure continued to decline until, about an hour and a half after the episode of hematemesis, it could be no longer determined.

In addition to the fact that the patient continued to vomit blood at intervals, another 2,500 cc. of bloody fluid was removed from the stomach by Wangensteen suction.

The blood transfusions and other antishock meas[illegible] but [illegible] tient was pronounced dead about eleven hours after the initiation of treatment.

Autopsy was performed by Dr. Silik H. Polayes, Director of Pathology at Cumberland Hospital. The significant observations were as follows:

Cavities.—Fibrous adhesions were present between the peritoneal surface of the ileum and the parietal layer of the peritoneum.

Heart.—The myocardium showed scattered hemorrhagic areas. Subendocardial hemorrhagic extravasation was present.

Respiratory System.—The trachea and bronchi were filled with bloody fluid. The lower lobes of the lungs contained atelectatic areas and areas of intra-alveolar hemorrhagic extravasation.

Gastrointestinal System.—The stomach was dilated and filled with bloody fluid. There was an intact gastrojejunal anastomosis. The mucosa was slightly thickened and congested. The peritoneal surface of the small intestine showed scattered hemorrhagic areas. The wall was edematous, and the lumen was filled with bloody fluid. *Microscopic examinations* of the small intestine revealed walls thickened by fibrosis. The submucosal veins were dilated. There was marked hemorrhagic extravasation through the submucosa and other layers of the wall.

In summary, the postmortem diagnosis was massive gastrointestinal hemorrhage due to rupture of multiple varicosities of the veins (phlebectasia) of the small intestine.

COMMENT

Multiple phlebectasia of the small intestine are uncommon. No statistics have been published on the incidence of this condition. If we accept Kaijser's[3] inclusion of "phlebectasia" and "hemangioma" under the same heading, however, some estimate as to its frequency can be arrived at as follows:

Hansen[4] pointed out that hemangioma (all forms) represents about 6 per cent of all benign tumors of the small intestine. Furthermore, in his autopsy figures, Raiford[5] noted a ratio of 9 benign neoplasms of the small bowel per 10,000 autopsies; Buckstein,[6] an incidence of 16 per 10,000; and Shandalow,[7] an incidence of 83 per 10,000. By a simple arithmetical process one can calculate that the incidence of multiple phlebectasia of the small intestine can be variously estimated at between 1 in 18,000 and 1 in 2,000 cases.

These are not impressive figures. They emphasize the importance of recognizing the common causes of gastrointestinal bleeding—gastric or duodenal ulcers (benign or malignant), eroded esophageal varices, gastric polyps, acute gastritis, small intestinal neoplasms and the like. Nevertheless, when it is possible either clinically, radiographically or by exploratory laparotomy to exclude the aforemen-

Genitourinary Surgery

Benign Cysts of the Testicle

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BENIGN cysts of the testicle (benign teratoma) are rare and comprise less than 5 per cent of all testicular tumors; approximately 95 per cent are malignant. Most involve the testis; those of the tunica albuginea are less common.

The literature contains pertinent data on causation, symptomatology, diagnosis and treatment. In many of the standard textbooks, however, these benign cysts are not even mentioned. In 1841 Cooper first described simple cyst of the testis but called it "hydatid disease." In 1853 Curling described two forms of testicular tumors: innocent benign cysts and solid malignant growths. In 1885 Hochenegg reported one case and in 1896 Wilms published his extensive treatise on cystic tumors of the testicle. In 1911 Ewing published his excellent article clarifying the classification of testicular tumors. In 1935 Jenkins and Deming reported a case of benign cyst of the testicle and pointed out the existing difficulty, in differentiating between simple cysts and those of neoplastic origin. Accurate pathologic examination has now solved this problem. Dockerty and Priestly (1942) reported 3 dermoid cysts among 400 testicular tumors (0.75 per cent). Muir (1952) in reporting a case of dermoid cyst of the testicle stated that it is the rarest tumor of the testicle in man but is common in the horse. Cook and Kimbrough (1954) reported three benign tumors in 80 cases (3.75 per cent).

It is interesting to note that ovarian tumors occur ten times more frequently than testicular tumors and that ovarian dermoids occur 100 times more frequently than testicular dermoids. In addition to dermoid and epidermoid cysts, there are such benign tumors as the lipoma, fibroma, neurofibroma, cavernous hemangioma, and leiomyoma.

R. H., aged 16, was referred in July 1947 for urologic diagnosis and treatment. Since childhood he had been suffering from recurring attacks of urinary infection accompanied by chills and fever. Complete examination revealed bilateral pyelonephritis, ureteral stricture and congenital hypertrophy of the vesical neck. Examination of the testicles at this time disclosed no abnormality. Stasis was relieved by periodic dilation of the ureters and urethra, and infection was controlled by antibiotics and lavage of the kidney pelves. (The patient's mother had recently been nephrectomized for intractable kidney infection secondary to atrophic pyelonephritis in a hypoplastic kidney.)

In May 1956, nine years after the first visit, routine re-examination of the external genitalia revealed a painless, nodular, firm, round mass involving the superior pole of the left testis. The patient had felt no pain in this area and, in fact, was unaware of the presence of the mass. On May 18th the vesical neck obstruction was relieved by removal of 3 Gm. of prostatic tissue by transurethral resection. On May 25 the left testicle was exposed under pentothal sodium anesthesia. A hard nodular mass, 1.8 cm. in diameter, was encountered in the superior half of the testis. After consultation with the pathologist at St. Mary's Hospital, it was decided to perform

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Read at the Regional Meeting of the California Chapters, International College of Surgeons, Las Vegas, April 8-9, 1957.

orchiectomy and not to depend on biopsy examination, for fear of spreading cancer cells if this were a malignant tumor. The testicle was *removed*, with care taken to ligate the cord high up in the inguinal canal. The postoperative course was uneventful.

When examined on Dec. 28, 1956, the patient was in good health; there had been no recurrence.

The pathologic report by Dr. Nathan Rudo revealed the following:

Gross: The specimen consisted of the left testicle, epididymis and part of the spermatic cord enclosed in the tunica vaginalis. It weighed 35 Gm. and measured 5 by 4 by 3 cm. Within the superior portion of the testicle was a firm nodule 1.8 cm. in diameter. On section, the nodule consisted of white laminated caseous material with a peripheral bounding capsule attached at one area to the tunica albuginea. The adjacent testicular tissue appeared normal, and no abnormalities were seen in the rest of the specimen (Fig. 1).

Microscopic: The capsule of the nodule was composed of a thin layer of stratified squamous epithelium resting on a base of fibrous connective tissue. The epithelial cells were flattened and the superficial cells contain keratohyalin granules. Laminated keratin masses rested on the epithelium in the form of thin wavy sheeets. No accessory skin structures or teratomatous elements such as cartilage, teeth or glands were found. The testicular tubules showed a moderate degree of spermatogenic activity. There was an increased number of interstitial cells (Fig. 2).

The diagnosis was epidermoid inclusion cyst of the testicle.

Careful routine examination of all men entering the Armed Services, since World War II, has revealed that benign cyst of the testicle may not be quite so rare as formerly believed. Though they may be painful, many of these cysts are asymptomatic and in private practice are usually detected during routine examination or in cases of trauma or acute inflammation of the testicle. Cystic disease may be congenital or may occur after birth. Albert, Frater, and others found a number of these cysts while performing routine autopsies.

When a differential diagnosis is being made, the presence of a painless, slowgrowing, firm, round or ovoid mass in the testicle should lead the physician to suspect benign cyst. The neoplastic tumor grows much faster than the latter type. It should not be confused with encysted hydrocele of the body of the testis, which usually transmits light. Cysts of the tunica albuginea are apt to be smaller, may be multiple, and are situated nearer the periphery of the testis, completely invested with the tunica albuginea. Microscopic study is necessary in order to distinguish these from simple cysts of the substance of the testis.

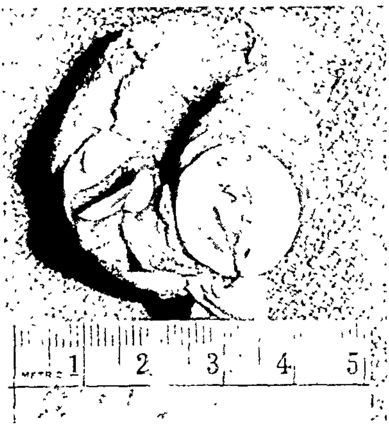

Fig. 1.—Sagittal section of testicle, showing epidermoid inclusion cyst arising from inner surface of its substance, close to tunica albuginea (×1.2).

Gonadotrophic hormone determination is valuable in the diagnosis of many types of neoplastic growths, such as adenocarcinoma, chorio-epithelioma, and certain kinds of seminoma, especially when there is metastasis. However, it is of no use in cystic disease of the testicle, as there is no increase in gonadotrophic hormones nor in certain types of malignant neoplasm, i.e., seminoma without lymphoid stroma (Stevens).

The accepted treatment is orchiectomy with ligation of the cord high up in the inguinal canal. Local excision consisting of shelling out the cyst has been carried out by Arcadi, Johnson, Olsen and Calderin, and others. It is generally agreed that all tumors of the testicle should be surgically explored to rule out neoplasm, since even seemingly benign growths may be potentially malignant. If there is the slightest doubt, orchiectomy should be performed, as it is better to remove the testicle for a benign lesion than to disseminate cancer cells. Further exploration is best left to the pathologist. To date there is no record of malignant change in a dermoid cyst of the testicle.

The case of a relatively quiescent embryonic tumor of the testicle reported by Pirot and Moncourier is of great interest. In spite of intensive radiation therapy, the patient, aged 20, rapidly succumbed to general metastases of the lung and skin. The implants transported through the blood stream were highly malignant.

Radiation is of no value in the postoperative treatment of benign cyst of the testicle.

Many hypotheses have been presented but the cause of benign cyst (benign teratoma) has not been satisfactorily determined. As early as 1855 Verneuil advanced his theory that they consisted of an imperfectly formed fetus within a fetus. Bland-Sutton agreed with this theory. This concept is erroneous—there is no general arrangement or grouping of parts as in an imperfectly formed fetus. Muir believes their formation is due to disturbances of embryonic organizers; some claim that they are congenital anomalies arising from the müllerian or wolffian ducts; others contend they are retention cysts.

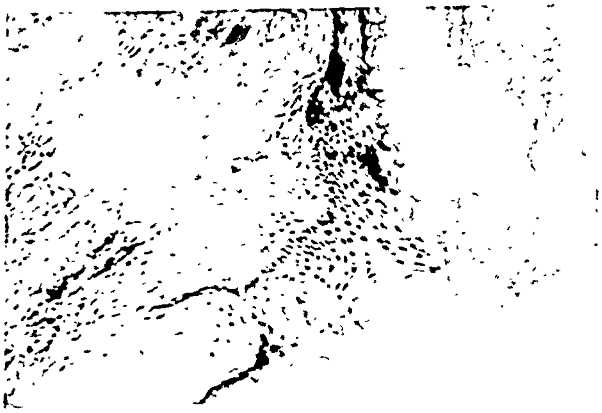

Fig. 2.—Photomicrograph of testicular cyst wall composed of stratified squamous epithelium. Note layers of keratin on surface (×165).

Research on the testicle and tunica albuginea should be carried out in the fetus and the newborn in order to determine the congenital nature of the disease. Its frequency in young infants substantiates the theory of congenital anomaly. Rose and Carless state that testicular cysts are due to dilatation of lymph spaces.

The rôle of trauma is interesting. A number of instances have been reported in which trauma called attention to a testicle containing a pre-existing asymptomatic cyst. Barach's case of a dog in which a huge dermoid cyst (7 by 6.5 cm.) replaced the testicle five years after trauma, has been widely quoted. Frater stated that trauma is a positive etiologic factor.

The relation of preexisting infection in the formation of benign cysts has been pointed out. Smith reported a large multilocular cyst of the testicle occurring six years after gonorrhea complicated with epididymitis. He considered the cyst a result of inflammatory occlusion of the vas deferens and epididymis. In 2 of Arcadi's 3 cases of cyst of the tunica albuginea, evidence of a preexisting inflammatory process was encountered. In his opinion, cyst of the tunica albuginea is commonly associated with inflammation of the testis or adjacent structures.

To evaluate the role of infection, careful histologic examination should be made of the extirpated testicle. This would reveal chronic inflammatory processes as characterized by round cell infiltration and fibroblastic proliferation of tissues. In addition, careful study should be made of the vas deferens, epididymis, opposite testicle, prostate, and seminal vesicles.

COMMENT

Epidermoid or inclusion cysts include ectodermal elements without evidence of endoderm or mesoderm.

It is highly probable that various etiologic factors contribute to the formation of benign cysts of the testicle. In some instances they are congenital, while in others trauma or infection may be the predisposing mechanism.

In my patient it was difficult to determine the cause of the cyst. The fact that the patient did not have it at the age of sixteen rules out a congenital anomaly. Chronic pyelonephritis and cystitis were present yet the pathologic examination revealed no evidence of preexisting infection of the involved testicle.

SUMMARY

A case is reported of asymptomatic, benign epidermoid cyst of the left testicle in a man aged 25, which was relieved by orchiectomy.

Recent careful routine physical examinations have revealed that benign cysts of the testicle may not be quite so rare as they were formerly considered. They comprise less than 5 per cent of all testicular tumors.

The presence of a painless, slow-growing, firm round mass in the testis should make one suspect a benign cyst.

The accepted treatment is orchiectomy, although in exceptional instances local excision can be performed. All testicular tumors should be regarded as potentially malignant. In case of the slightest doubt orchiectomy should be performed, as it is preferable to remove the testicle for a benign lesion than to disseminate malignant cells.

The cause of benign cyst has yet to be satisfactorily determined, in spite of the many hypotheses that have been presented. It is highly probable that various etiologic factors contribute to its formation.

ZUSAMMENFASSUNG

Es wird über den Fall einer symptomlos verlaufenden epidermoiden gutartigen Zyste im linken Hoden eines 25jährigen Mannes berichtet, der mit Resektion des Hodens behandelt wurde.

Neuerdings haben sorgfältige routinemässige Körperuntersuchungen ergeben, dass gutartige Zysten des Hodens wohl nicht so selten vorkommen, wie bisher angenommen wurde. Sie bilden etwa fünf Prozent aller Hodengeschwülste.

Das Bestehen einer schmerzlosen langsam wachsenden festen Geschwulst im Hoden sollte den Verdacht auf eine gutartige Zyste erwecken.

Die anerkannte Form der Behandlung besteht in der Resektion des Hodens, obgleich in Ausnahmefällen auch eine örtliche Resektion durchgeführt werden kann. Alle Hodengeschwülste müssen als potentielle bösartige Erkrankungen angesehn werden. Wenn auch nur der leiseste Zweifel besteht, sollte eine Hodenresektion ausgeführt werden, weil es besser ist, einen Hoden wegen einer gutartigen Erkrankung zu entfernen, als die Ausstreuung bösartiger Zellen zu riskieren.

Trotz der zahlreichen entwickelten Hypothesen gibt es noch keine befriedigende Erklärung der Ursache gutartiger Hodenzysten. Wahrscheinlich spielen bei ihrer Entstehung verschiedene ätiologische Faktoren mit.

SUMARIO

Um caso de cisto epidemoide do testiculo esquerdo, assintomático, num homem de 25

anos de idade tratado com sucesso pela orchiectomia é apresentado.

A observação mais cuidadosa em exames físicos routineiros revelou que a ocurrencia de cistos benignos testiculares não são entidades tão raras como se acreditava.

A incidência é de menos de 5% entre todos os tumores testiculares. A presença de uma tumoraço de consistência firme, de crescimento lento e indolor induz a suspeita de um cisto benigno.

O tratamento aceito é a orchiectomia, porem em casos excepcionais a excisão local pode ser realizada. Todos os tumores testiculares devem ser encardados como potencialmente malignos e em caso de dúvida a orchiectomia deve ser praticada, por ser preferivel remover o testiculo com uma lesão benigna a disseminar celulas de natureza maligna.

A causa dos cistos benignos ainda não está satisfactóriamente determinada, apezar das muitas hipóteses que têm sido apresentadas. É provavel que em sua formação concorram diversos fatores etiológicos.

RIASSUNTO

Viene riferito un caso di cisti benigna epidermoide del testicolo, del tutto asintomatica, in un uomo di 25 anni, che fu curato con la orchiectomia.

Richerche accurate hanno dimostrato che le cisti benigne del testicolo non sono così rare come si credeva; esse rappresentano meno del 5% di tutti i tumori del testicolo.

Si devono sospettare quando ci si trova in presenza di una massa solida, indolente, a sviluppo lento. La cura di scelta è la castrazione, benchè talvolta possa essere possibile la semplice asportazione della cisti.

Tutti i tumori del testicolo devono essere considerati come potenzialmente maligni. Nei casi in cui esista anche un minimo dubbio si deve eseguire l'orchiectomia, poichè è meglio togliere un testicolo piuttosto che consentire la disseminazione di cellule maligne.

La patogenesi delle cisti benigne deve ancora essere stabilita in maniera soddisfacente, nonostante le varie ipotesi prospettate fino ad ora. E' molto probabile che fattori diversi contribuiscano alla loro comparsa.

RESUMEN

Se trata de un caso de quiste epidermoide, benigno y asintomático, del testículo izquierdo, extirpado por orquidectomía en un enfermo de 25 años.

El reconcocimiento físico minucioso que de forma rutinaria se va realizando mas cada vez ha demostrado que los quistes benignos del testículo no son tan raros como antes se pensaba. Comprenden menos del 5 por ciento de todos los tumores testiculares.

La presencia en el testículo de una masa firme, no dolorosa de crecimiento lentodebe hacer pensar en el quiste benigno.

El tratamiento aceptado es la orquidectomía aunque en circunstancias excepcionales pueda llevarse a cabo la excisión local del quiste.

Todos los tumores del testículo deben considerarse como potencialmente malignos. Ante la mas leve sospecha debe practicarse la orquidectomía ya que es preferible extirpar un testículo por una lesión benigna que diseminar células de naturaleza maligna.

Hasta la fecha no ha sido aún bien determinado el origen de los quistes benignos a pesar de haberse discutido diversas teorías. Es probable que contribuyan a su aparición diferentes factores etiológicos.

RÉSUMÉ

Il s'agit d'un cas asymptomatique de kyste épidermoide bénin du testicule gauche chez un homme de 25 ans, guéri par orchiectomie.

Il ressort de recherches systématiques récentes que le kyste testiculaire bénin est moins rare qu'on le pense (5% de toutes les tumeurs des testicules). Il faut y songer lorsqu'on se trouve en présence d'une masse tumorale ferme, à croissance lente.

Traitement: orchiectomie; dans des cas exceptionnel on pourra se contenter d'une excision locale.

Les tumeurs des testicules devraient toujours être suspectées de malignité. L'orchiectomie est indiquée lorsqu'il y a le moindre doute, car il est préférable de pratiquer l'ablation d'un testicule dissémination de cellules malignes.

Nous en sommes encore aux hypothéses quant à l'origine des kystes bènins des testicules; il est probable que divers facteurs étiologiques entrent en ligne de compte.

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The discovery that man can be scientifically manipulated, and that governments can turn large masses this way or that as they choose, is one of the causes of our misfortunes. There is as much difference between a collection of mentally free citizens and a community molded by modern methods of propaganda as there is between a heap of raw materials and a battleship. Education, which was at first made universal in order that all might be able to read and write, has been found capable of serving quite other purposes.

—Russell

Obstetric and Gynecologic Surgery

The Modern Technic of Knife Conization

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VALUABLE modifications of the original Sturmdorf technic[1] have been developed since introduction of the use of twin stitches[2] for inversion of the mucosa. The complete technic with its modern refinements, will be presented in this article.

The procedure starts with *extensive dilation* of the cervical canal to provide ample space for the flaps of mucosa that are inverted later. Insufficient dilation may result in stenosis of the cervical canal.

The circular incision (Fig. 1*A*) should *save as much mucosa* as possible in order to obtain a large flap, long enough to be readily pulled over the rough surface of the cervix after the conization.

The mucosa must be completely separated from the underlying tissue and *well mobilized* all around the cervix. This frequently neglected but important step greatly facilitates the inversion. A satisfactory operative result depends a great deal on this maneuver.

The mobilized mucosa is pushed back, and two suture ligatures (*T 1* and *T 2*) are placed around the right and left edges of the cervix (Fig. 1*B*). They are not tied and are left long. These so-called traction sutures permit the uterus to be pulled down and keep the cervix in position without the use of any traumatizing instruments.

Another pair of stitch ligatures (*H-H*) is placed about 1 cm. above the traction sutures for prophylactic hemostasis. They are thoroughly tied and cut short (Fig. 1*B*).

Conization of the cervix is performed by stablike motions with the knife (Fig. 1*C*). Care should be taken not to sever the traction sutures, *T 1* and *T 2*.

The twin stitches, which are used for the inversion of the mucosa into the cervical canal, are placed *in the midline*.

Anteriorly, the cervix is transfixed with the needle of the first twin suture perpendicular to the wall. Thus, the stitch canal will open high in the cervix and the flap of mucosa can be pulled sufficiently high into the cervical canal.

The point of the needle may easily be caught in the posterior cervical wall. This is prevented by the cervical rail, an instrument that protects the tissue and guides the needle through the external cervical orifice (Fig. 2*A*). The needle is then passed through the anterior flap of the mucosa, not too close to its edge, from the rough to the intact surface (Fig. 2*B*).

The second anterior twin suture is passed 0.5 cm. above the first, *only through the cervical wall* (Fig. 2*C*) and not through the vaginal flap (Fig. 2*D*). The four free ends of the twin ligatures are seized in a hemostat. They will be united later.

The posterior set of twin stitches is applied in a different way. The needle of the first suture is passed *first* through the

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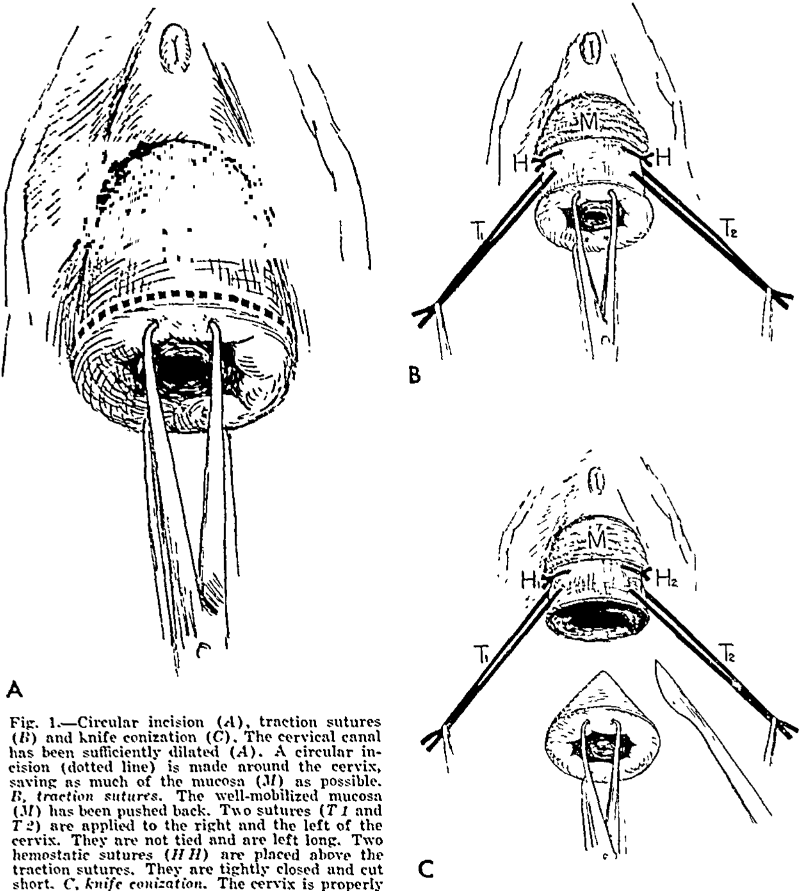

Fig. 1.—Circular incision (*A*), traction sutures (*B*) and knife conization (*C*). The cervical canal has been sufficiently dilated (*A*). A circular incision (dotted line) is made around the cervix, saving as much of the mucosa (*M*) as possible. *B, traction sutures.* The well-mobilized mucosa (*M*) has been pushed back. Two sutures (*T 1* and *T 2*) are applied to the right and the left of the cervix. They are not tied and are left long. Two hemostatic sutures (*H H*) are placed above the traction sutures. They are tightly closed and cut short. *C, knife conization.* The cervix is properly exposed by traction on the sutures *T 1* and *T 2* by assistants. The cervical cone is excised with the knife.

posterior flap of the mucosa, from the intact to the rough surface (Fig. 3*A*). Then the posterior wall of the cervix is transfixed from the *inside* of the canal to the *outside* (Fig. 3*B*). The second twin suture runs only through the posterior cervical wall, 0.5 cm. above the first one (Fig. 3*C*). It does not pass the posterior

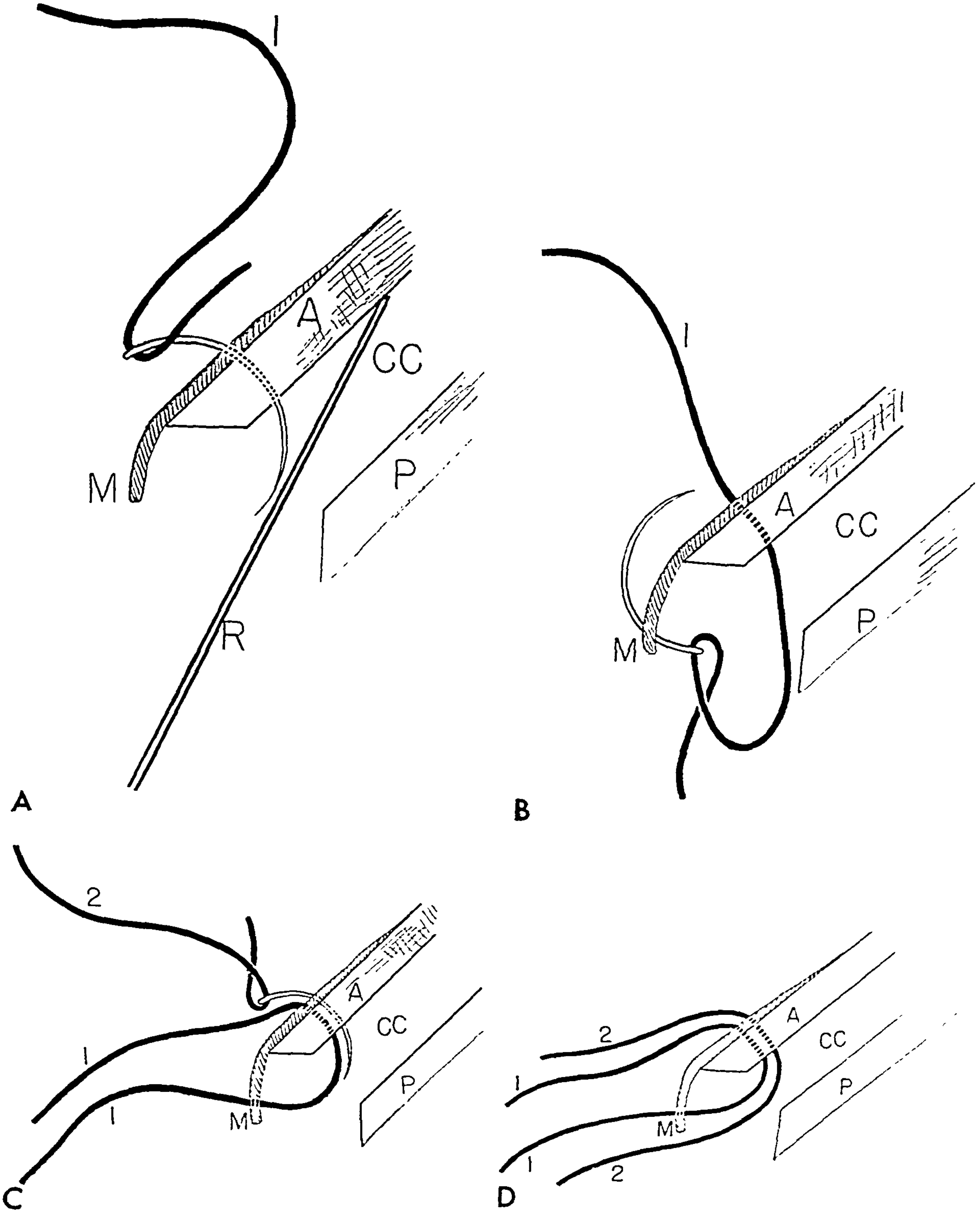

Fig. 2.—*A, first anterior twin stitch, first step.* The well-mobilized mucosa (*M*) is pulled downward. The needle, furnished with ligature *1*, is passed through the anterior cervical wall (*A*) in the midline. The rail (*R*) prevents the needle point from being caught by the posterior wall (*P*) of the cervical canal (*CC*). *B, the first anterior twin stitch (second step).* Ligature *1* is passed through anterior flap (*M*), not too close to its edge. *C, the second anterior twin stitch.* Needle with ligature *2* is passed through the anterior cervical wall (*A*) in the midline, about 0.5 cm. above ligature *1*. *D*, note that ligature *2* does not include the mucosa (*M*).

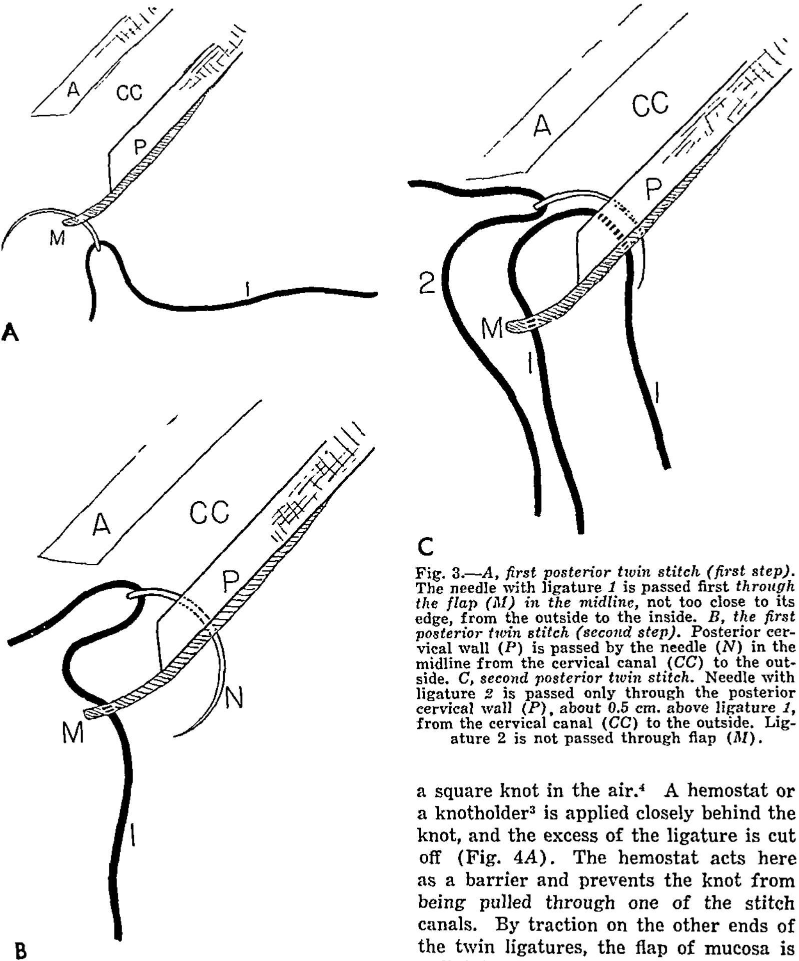

Fig. 3.—*A, first posterior twin stitch (first step).* The needle with ligature *1* is passed first *through the flap (M) in the midline,* not too close to its edge, from the outside to the inside. *B, the first posterior twin stitch (second step).* Posterior cervical wall (*P*) is passed by the needle (*N*) in the midline from the cervical canal (*CC*) to the outside. *C, second posterior twin stitch.* Needle with ligature *2* is passed only through the posterior cervical wall (*P*), about 0.5 cm. above ligature *1*, from the cervical canal (*CC*) to the outside. Ligature 2 is not passed through flap (*M*).

flap of the mucosa.

The posterior set is tied first. The ends of the ligatures *at the flap* are united by a square knot in the air.[4] A hemostat or a knotholder[3] is applied closely behind the knot, and the excess of the ligature is cut off (Fig. 4*A*). The hemostat acts here as a barrier and prevents the knot from being pulled through one of the stitch canals. By traction on the other ends of the twin ligatures, the flap of mucosa is pulled into the cervical canal (Fig. 4*A*). The assistant supports this maneuver with the previously attached hemostat behind the knot. Thus the tension is considerably reduced and the danger of

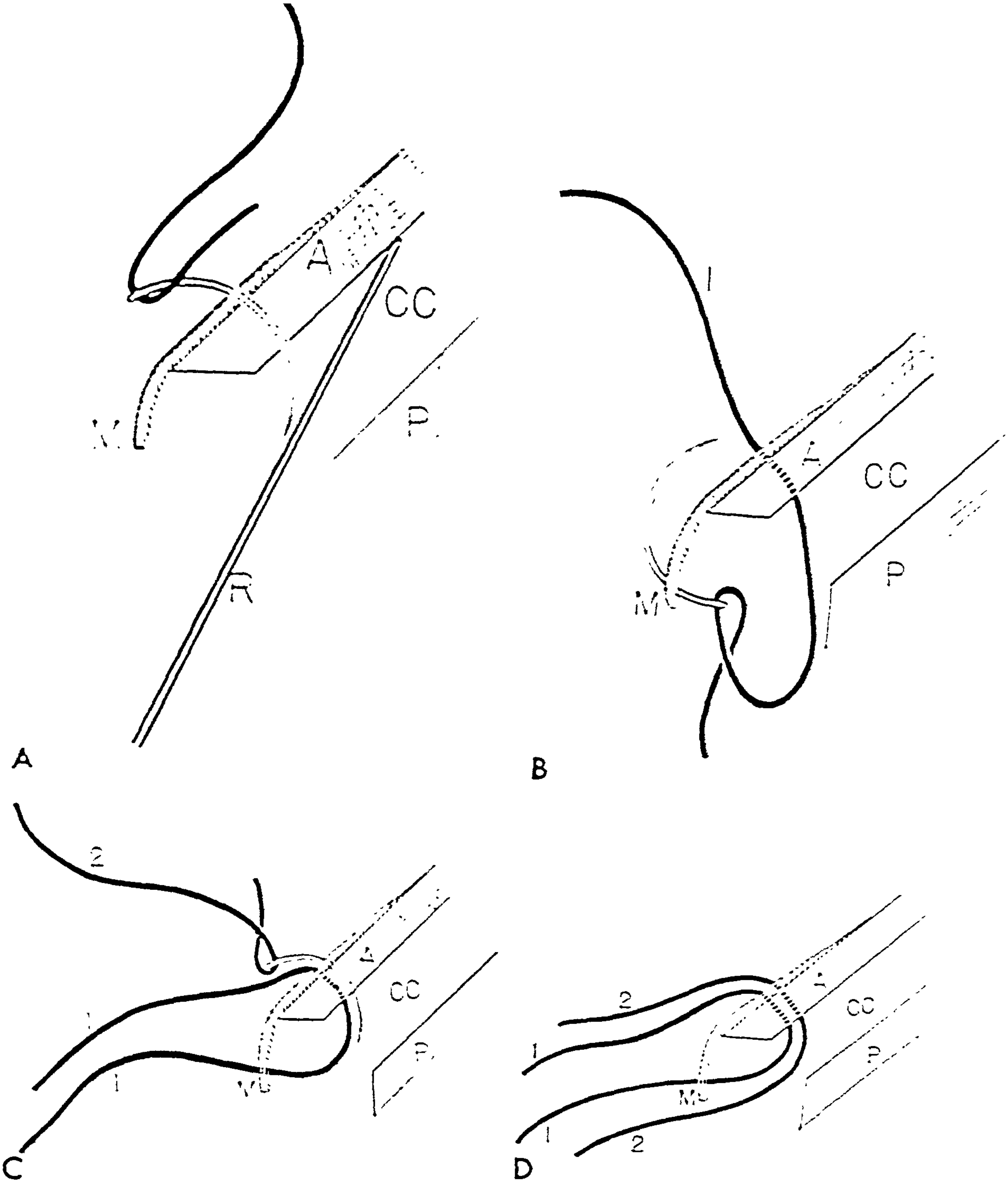

Fig. 2.—*A, first anterior twin stitch, first step.* The well-mobilized mucosa (*M*) is pulled downward. The needle, furnished with ligature *1*, is passed through the anterior cervical wall (*A*) in the midline. The rail (*R*) prevents the needle point from being caught by the posterior wall (*P*) of the cervical canal (*CC*). *B, the first anterior twin stitch (second step).* Ligature *1* is passed through anterior flap (*M*), not too close to its edge. *C, the second anterior twin stitch.* Needle with ligature *2* is passed through the anterior cervical wall (*A*) in the midline, about 0.5 cm. above ligature *1*. *D,* note that ligature *2* does not include the mucosa (*M*).

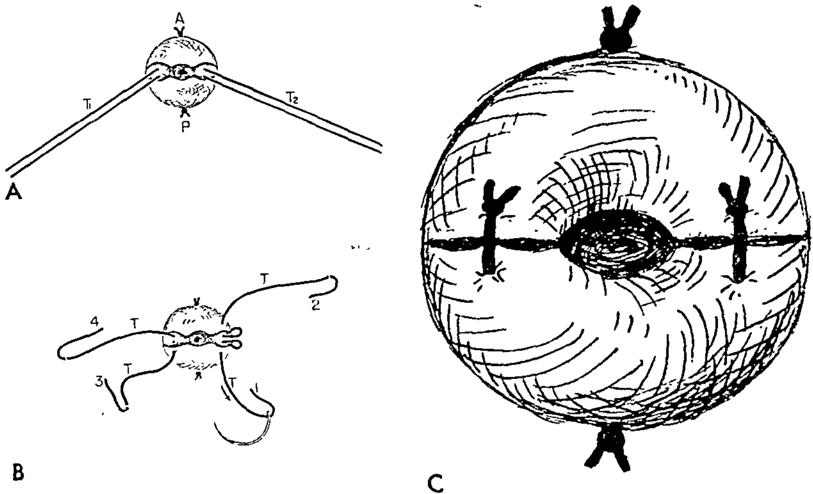

Fig. 5.—*A*, anterior and posterior flaps have been inverted. Traction sutures *T 1* and *T 2*, still in place, emerge from gap remaining between flaps of mucosa. *B, closing of the mucosa with the traction sutures.* Empty needle is attached to end *1* of traction suture (*T*) and passed through adjacent edge of the mucosa. The same needle is used for passing ends *2*, *3* and *4* of traction sutures through respective edge of mucosa. *C*, *traction sutures tied, thus closing mucosa.*

damaging the flap with the ligature completely eliminated. The other ends of the ties are then united on the outside of the cervix (Fig. 4*B*).

The anterior set of twin stitches is tied in a similar way. The ends of the twin ligatures *at the flap* are united first. Again, a hemostat is attached to the ligature behind the knot and the excess of the ligature cut off (Fig. 4*C*). Traction on the free ends of the twin ligatures pulls the mucosa, supported by the hemostat, into the cervical canal. The free ends are then tied at the outside of the cervix (Fig. 4*D*).

The remaining lateral gaps between the anterior and posterior flaps of the mucosa are closed with the previously applied traction sutures, which are still in place (Fig. 5*A*). The four ends of these two ligatures are attached, one after the other, to the same needle and passed through the anterior and the posterior flap close to the edge of each (Fig. 5*B*). The mucosa is

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Fig. 4 (*opposite*).—*A, typing of the posterior twin stitches.* Ends of posterior twin ligatures *1* and *2 at flap (M)* are united first, and a curved hemostat is placed behind the knot. Flap (*M*) is pulled into cervical canal (*CC*) by traction on free ends (*FF*) *of* ligatures *1 and 2*. *B*, *free* ends of posterior twin ligatures are united at outside of posterior cervical wall (*P*). The other knot of the twin ligature is in the cervical canal (*CC*). *C, tying of the anterior twin stitches.* The ends of the anterior twin ligatures *1* and *2 at the flap (M)* are united first and a hemostat is placed behind the knot. Supported by the hemostat, the flap (*M*) is pulled into the cervical canal (*CC*) by traction on the free ends (*FF*) of ligatures *1* and *2*. *D*, the free ends of the twin ligatures *are united in the midline outside* of the anterior cervical wall (*A*). The other knot of the twin ligature is in the cervical canal (*CC*).

neatly united by tying the traction sutures (Fig. 5C), which, in addition, provide excellent hemostasis.

COMMENT

In former technics the twin stitches were passed right and left off the midline through both the cervical wall and the mucosal flap. The united ligatures, therefore, did not cross the edges of the flaps, and the contact of the edge with the inside wall of the cervix was not sufficient. Occasionally the floating edge did not heal properly on the inside of the cervix. If only one of the twin ligatures is passed through the vaginal flap, the tied ligature must cross the edge of the flap and the contact of the mucosa with the cervical wall will be perfect. Placing both twin stitches in the bloodless midline also makes the inversion more exact.

Both anteriorly and posteriorly, the first twin stitch is carefully passed through the mucosal flap at a greater distance from the latter's edge than before. This eliminates tearing of the flap when it is pulled into the cervical canal.

The use of the cervical rail is another refinement of the technic. Passing the needle through the anterior cervical wall from inside to outside involves the danger of breaking the needle, especially if backhand stitches are used. Twin stitches are always forehand stitches, which are safer and more precise. The needle point, if correctly passed through the anterior wall at a right angle to the cervix, will frequently be caught by the posterior cervical wall. This is prevented by the cervical rail—an instrument that is merely an enlarged grooved director which, inserted in the dilated cervical canal, acts as a guide for the needle and as a protector of the posterior cervical wall. Posteriorly the twin stitches are applied without the rail, because the posterior cervical wall can readily be transfixed with forehand stitches running from inside to outside.

SUMMARY

New traction sutures (*T1* and *T2*) are presented, which have the following functions:

1. They provide an excellent exposure of the cervix.
2. They immobilize the cervix and eliminate the use of traumatizing instruments.
3. They allow neat closure of the mucosa after the inversion.
4. They serve as an additional hemostatic agent.

The application of the twin stitches shows the following modifications:

1. They are applied in the midline.
2. Neither anteriorly nor posteriorly is the second twin stitch passed through the flap of the mucosa. Thus the ligature must pass the edge of the flap, and contact of the inverted mucosa with the cervical wall is improved.
3. The first twin stitch is passed through the flap of the mucosa more distant from the edge.

The cervical rail, a valuable instrument for cervical operations, that guides the needle and protects the tissue, is presented.

RÉSUMÉ

De nouvelles sutures à traction (T1 et T2) sont présentées, dont les qualités sont les suivantes:

1. Elles procurent une bonne exposition du col.
2. Elles immobilisent le col et suppriment l'emploi d'instruments traumatisants.
3. Elles permettent une fermeture soignée de la muqueuse après l'inversion.
4. Elles servent d'agents hémostatiques supplémentaires.

L'application de points doubles implique les modifications suivantes:

1. Ils sont fixés sur la ligne médiane.

2. Le second point ne passe ni antérieurement ni postérieurement à travers le lambeau muqueux. Ainsi, la ligature doit passer par le bord du lambeau, et le contact entre la muqueuse inversée et la paroi cervicale est amélioré.

3. Le premier des deux points passe à travers le lambeau muqueux qui est le plus éloigné du bord.

Le "rail" cervical, instrument précieux pour les opérations sur le col, qui conduit l'aiguille et protège les tissus, est également décrit.

ZUSAMMENFASSUNG

Es wird über eine neue Art von Zugnähten (T 1 und T 2), die die folgenden Funktionen erfüllen, berichtet:

1. Sie gestatten eine ausgezeichnete Exponierung des Gebärmutterhalses.

2. Sie immobilisieren den Gebärmutterhals und schalten den Gebrauch verletzender Instrumente aus.

3. Sie gestatten einen sauberen Verschluss der Schleimhaut nach der Umstülpung.

4. Sie dienen als zusätzliches Hilfsmittel zur Blutstillung.

Die Verwendung von Doppelnähten erfordert folgende Modifizierungen:

1. Sie werden in der Mittellinie angelegt.

2. Die zweite Naht wird weder vorn noch hinten durch den Schleimhautlappen hindurchgeführt. Infolgedessen muss die Ligatur durch den Rand des Lappens hindurchgehen, und der Kontakt zwischen der eingestülpten Schleimhaut und der Wand des Gebärmutterhalses wird verbessert.

3. Die erste der beiden Nähte wird weiter vom Rande entfernt durch den Schleimhautlappen hindurchgeführt.

Ferner wird ein bei Operationen am Gebärmutterhals nützliches Instrument, die Kollumschiene, beschrieben, die den Weg der Nadel leitet und das Gewebe schützt.

RIASSUNTO

Vengono presentati nuovi metodi di trazione (T1 e T2) che hanno i seguenti vantaggi:

1. Realizzano una eccellente esposizione della cervice.

2. Immobilizzano la cervice ed eliminano l'impiego di strumenti traumatizzanti.

3. Consentono una perfetta chiusura della mucosa.

4. Hanno una funzione emostatica.

La applicazione di due punti comporta:

1. La loro applicazione sulla linea mediana.

2. Il secondo punto non passa attraverso la mucosa nè anteriormente nè posteriormente.

3. La prima coppia di punti passa attraverso il lembo di mucosa lontano dall'orlo.

Viene infine descritto uno strumento molto utile per gli interventi sulla cervice, che serve di guida all'ago e protegge i tessuti.

RESUMEN

Se presentan unas nueras suturas de tracción (T1 y T2), que tienen las siguientes funciones:

1. Dan excelente exposición del cervix.

2. Immovilizan el cervix y evitan el uso de instrumentos traumatizantes.

3. Permiten un cierre perfecto de la mucosa después de la inversión.

4. Función hemostática adicional.

La aplicación de las suturas gemelas incluye las siguientes modificaciones:

1. Se colocan en la línea suedia.

2. La segunda sutura no se pasa a través del colgajo de mucosa ni anterior ni pos-

teriormente. La ligadura debe pasan el borde del colgajo, y se mejora el contacto de la mucosa invertida con la pared cervical.

3. La primera sutura gemela se pasa através del colgajo de mucosa mas distante del borde.

También se describe una guía cervical, un instrumento valioso para operaciones en el cérvix, guía la aguja y protege los tejidos.

SUMARIO

Apresenta novos tipos de sutura de tração (T1 e T2) que se destinam: 1. excelente exposição do colo uterino; 2. imobilizam o colo e evitam o emprrêgo de instrumentos traumatizantes; 3. permitem síntese correta da mucosa após a operaçao; 4. servem como agente hemostático adicional; a aplicação de suturas duplas implicam nas seguintes modificações:

1. São aplicadas na linha mediana; 2. o fio não é passado atraves o retalho, nem anterior nem posteriormente. Desse modo a ligadura atravessando a narfem do retalho permite melhor contato da mucosa invertida com a parede do colo uterine; 3. o primeiro nó é feito atraves o retalho da mucosa em ponto mais distante da margem.

O protetor cervical é um instrumento valioso para operações no cervix porque serve de guia à agulha e protege os tecidos.

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> . . . All our passions, except grief, within proper bounds, have an useful object. And the perfection of the moral character is, not in a stoical apathy, so hypocritically vaunted, and so untruly too, because impossible, but in a just equilibrium of all the passions. I wish the pathologists then would tell us what is the use of grief in the economy, and of what good it is the cause, proximate or remote.
>
> —*Jefferson*

The Management of Pelvic Pain in Women

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IN analyzing pain from the gynecologist's point of view, it is necessary to limit one's scope to those conditions which are solely within the field of gynecology.

The nerves that supply the ovary are derived from the renal and aortic plexuses; they accompany the ovarian vessels in the tissue of the suspensory ligament of the ovary. The ovaries embryologically arise high in the abdomen and thus receive their nerve supply from a source other than that which supplies the other pelvic viscera. Pain of ovarian origin is caused chiefly by stretching of the capsule or disturbance of the circulation, or both. Benign or malignant tumors of the ovary do not ordinarily cause pain until they produce peritoneal irritation or stretching.

A more frequent cause of pain originating in the ovary is ovulation; such pain is commonly termed "mittelschmerz." Since the gynecologist must be a skilled diagnostician, his most important aid to diagnosis is a carefully performed pelvic examination.

Most uterine tumors are asymptomatic *per se*. When signs and symptoms are present, they result from the physical presence of the tumor, or from pressure on and adherence to surrounding structures, or from secondary changes in the tumor itself.

Carcinoma of the uterus, whether in the body or the cervix, is notoriously asymptomatic until its processes involve contiguous structures or nerves. A frequent cause of pain in the lower part of the abdomen is a postabortive process which involves the uterus primarily. Extreme degrees of procidentia may produce discomfort and pain in the lower part of the pelvis. The pain is caused chiefly by the enteroptosis that follows descent of the pelvic viscera and the resulting damage in the intra-abdominal contents.

Dysmenorrhea, or painful menstruation, is usually spoken of as a disease, though actually it is a symptom or manifestation of some underlying organic or functional abnormality. Presacral sympathectomy with complete excision of the superior hypogastric plexus, as proposed by Cotte, is an especially effective form of therapy in those cases in which no pathologic changes can be discovered outside the uterus. Membranous dysmenorrhea is usually characterized by severe pain and the passage of shreds in the menstrual blood. Such a shred at times amounts to a complete cast of the uterine body.

Ectopic pregnancy occurs most commonly in the fallopian tube and is one of the causes of severe pelvic pain, particularly at the time of ingestion. Thrombophlebitis of the deep pelvic veins is not uncommon and should not be overlooked in the diagnosis of deep pelvic pain. Heparin or dicumarol is now widely used in the treatment of such conditions. Excessive prolongation of the prothrombin time

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resulting from such therapy may be combated by the intravenous administration of vitamin K. Transfusions of whole blood may also be necessary.

Bigelow observed that varicocele is a frequent cause of pain in the pelvis. He referred to pelvic varicocele or enlarged veins in the broad ligaments or ovarian veins, a painful sequela of thrombophlebitis of these veins, and the occasional persistence of pain after the removal of ovarian tumors.

This author stated that the operation for varicocele provides a simpler and safer method of relieving the pelvic pain than do many other accepted operative measures. The afferent sympathetic nerves of the ovarian plexus constitute the main sympathetic nerves of this area. The left ovarian veins are frequently more liable to varicosities than are the right ovarian veins.

Pelvic pain is a major complaint associated with many definite and characteristic pelvic lesions, such as a twisted ovarian cyst, sudden hemorrhage accompanying rupture in the course of ectopic pregnancy or acute pelvic inflammation. In a study of these conditions at the Mayo Clinic it was observed that 50 per cent of the patients with endometriosis had no pain. In later life chocolate cysts and malignant growths are to be looked upon with a great deal of anxiety. In looking for granulomatous diseases of the pelvis, actinomycosis should not be overlooked.

When a patient, particularly a girl or a young woman, presents some continuous leakage of urine or discomfort about the urinary tract, ectopia of the ureter distal to the internal urethral sphincter should be ruled out. Urethral diverticulum is more common than it is sometimes considered. This diagnosis should be made by physical examination and often can be confirmed by roentgenograms taken after an injection of opaque substance. Of course, the remedy is removal.

Abnormal vaginal bleeding not associated with pregnancy should not be overlooked, though it commonly is. Vaginal examination should not be postponed through fear of a menstrual flow, lest an early malignant neoplasm be overlooked.

Pain is a variable symptom, its character, its severity and the reaction depending on the individual patient and her threshold for discomfort. One should not dismiss pain as unimportant until a thorough and careful examination has been made.

Pelvic inflammatory disease is the most common cause of pain in the lower part of the abdomen, and chronic residual pelvic inflammation of the reproductive structures may provoke pain over a period of years. Differentiation between acute salpingitis and appendicitis is not always easy, and it is generally held that the old diagnosis of chronic appendicitis is not nearly as frequent as was thought to be and that in many instances there is pathologic change other than that which may exist in the appendix. The tendency today in the treatment of acute salpingitis is conservatism, and the gynecologist is quite at ease in treating his patients conservatively if he knows that acute appendicitis, or something even more serious, is not present. The pyogenic type of pelvic inflammation usually involves the serosa and wall of the fallopian tube; less often, the mucosal lining.

Tuberculous salpingitis, which occurs with greater frequency in different sections of the United States and throughout the world, is often estimated at about 5 per cent. But statistics, as above stated, show that over the world it will vary from 1 to 1.5 per cent to as high as 15 to 20 per cent. Chronic pelvic inflammation in a tuberculous person may be of tuberculous origin. Parectopic pregnancy is known to cause pain. This should be emphasized, as it is easy to overlook a ruptured ectopic pregnancy until the patient has become quite exsanguinated. If a patient has missed a menstrual period, even by a few days, this is often a cue; one of the simpler methods of early diagnosis of ruptured ectopic pregnancy is a cul-de-sac puncture revealing blood that does not coagulate normally. In probably 80 to 90 per cent of the cases the patient has missed a menstrual period. There is probably the beginning of a flow, or at least a show of blood. Some of the pain is frequently of value in ectopic rupture due to the blood irritating the peritoneal cavity about the diaphragm, etc.

Ovarian neoplasms do not always produce early pain, but if a solid tumor is present it should be regarded as possibly a malignant tumor.

In evaluating the pain which is complained of by individuals we should not overlook the so-called traumatic abdominopelvic pain. A certain number of patients will come into this category, but certainly they should not be so classified until all possible forms of pathologic change have been ruled out.

Relief from certain types of pelvic pain can be obtained by sympathectomy and the intraspinal injection of alcohol. The intractable pain associated with carcinoma of the uterus, particularly the cervix, is relieved by such procedures. Pelvic sympathectomy, or removal of a part of the sympathetic nerve plexus, known as the presacral nerve or the superior hypogastric plexus, is not a serious operation. The intraspinal injection of alcohol is used on occasion by some neurosurgeons and has proved valuable.

Guerriero and Stuart did an elaborate piece of work on "checking out" the chief complaints of 5,539 patients who were admitted to the hospital under their observation with the chief complaint of pelvic pain. There were 1,371 cases in which the pain was of gynecic origin or simulating gynecic pain. Five hundred and seventy-one, or 41.6 per cent, of these women actually had pelvic pain of other than gynecic origin, and 800, or 58.4 per cent, had gynecic states to explain the origin of their pain. Guerriero and Stuart stated that only 10.6 per cent of these women required major operations for the relief of pain. They recommend that, unless an acute state requires it, operation can be deferred until the cause of the pain has been determined.

The management of severe dysmenorrhea and pelvic pain is as much a problem now as it was in 1852, when Marion Sims stated in his handbook on gynecology: "Of all the newly found drugs, not any is of much value to the woman with severe cramps, except laudanum." In 1921 Leriche made a complete study of the pelvic sympathetic system in its relation to pelvic pain. He developed periarterial sympathectomy of the internal iliac arteries. In 1925 Cotte noted that the same results could be obtained by resection of the superior hypogastric plexus. Cotte called the superior hypogastric plexus the presacral nerve.

The pain of cervicitis, the pain of labor in its first stage and the retroumbilical (not umbilical) pain of appendicitis are pure visceral pains, deep-seated, ill localized and with no somatic component.

Rupture of the corpus luteum may present a clinical picture essentially similar to that of a ruptured follicle, except that the time of onset of menstruation is different. Many women with acute bilateral pelvic pain do not have pelvic inflammatory disease, at least not in an acute inflammatory stage.

Pelvic cellulitis is observed most frequently during the puerperium; it often occurs, however, in nonpregnant patients after uterine or cervical instrumentation.

Intraperitoneal rupture of a tubo-ovarian abscess is a major catastrophe. The patient may or may not have been known to have had an abscess or a cyst. Treatment comes under the heading of emergency surgical intervention. After treatment for shock, laparotomy is done, with the principal aim of establishing intraperitoneal drainage. Extensive attempts to carry out pelvic drainage should be resisted. This condition presents one of the more serious acute abdominal problems.

Acute pain in the lower abdominal region may arise from adnexal neoplasms that undergo torsion hemorrhage into tumor or rupture.

Placental infarction in late pregnancy may simulate partial placental separation.

Mengert offered a classification of pelvic pain that seems fairly workable: (1) intragenital pain, with which the pelvic lesions responsible are readily recognizable, and (2) extragenital pain, with which the pelvic organs are normal.

The normal cervix is a rather insensitive organ, as is indicated by the free use of cauterization of the cervix without anesthesia.

Birth trauma often results in cystocele, rectocele or uterine prolapse, which often causes pelvic distress. Adenomyosis often causes a discomfort described as "weight in the pelvis," and menorrhagia is frequently associated with this. Endometriosis is one of the most incapacitating of the chronic pelvic pains. Backache is often due to constipation. Some extragenital pain may be caused by pelvic varices, relaxation or strain over the sacroiliac joints or intestinal diverticulosis. Obviously, there are orthopedic as well as gynecologic problems to be considered.

Pelvic pain is a prominent symptom of many pelvic lesions. Its interpretation requires careful investigation and correlation with other symptoms and clinical data. Careful study of all systems is essential in diagnosis and treatment.

Pain is now accepted as a sixth and separate sense, quite apart from the so-called primary senses, such as sight, hearing, taste, smell and touch. The visceral peritoneum is insensitive to such local stimuli as pricking, cutting or pinching, but any pull on a mesentery or attachment of a viscus to the abdominal wall will cause pain.

The nerves that supply the pelvic organs—the bladder, perineum, vulva, vagina and anus—are of three types: the somatic, or cerebrospinal, the sympathetic and the parasympathetic. Excision of the superior hypogastric ganglia (presacral nerves) is advocated for the relief of primary dysmenorrhea in some instances. Cordotomy is of benefit in some cases. Cobra venom may be of value in relieving pain, since it has an anelgesic effect without being habit-forming.

The somatic, sympathetic and parasympathetic nerves deserve discussion here. Pain from the pelvic viscera reaches the consciousness of the patient through somatic afferent nerve fibers called the "viscerosensory nerves," which pass upward from the pelvic viscera in the sympathetic chains.

There is a cause for all pain, and the use of the word "idiopathic" means that the cause is still being sought. It also means that all obvious causes, such as tumor, acute infection, chronic infection, ureteral stones, ureteral strictures, obstruction or prolapse, have been ruled out.

Some of the theories set forth as to the cause of pelvic pain may be mentioned: chronic metritis, chronic salpingitis, chronic appendicitis, adhesions, congestion, psychoneurosis and ovarian dysfunction. Under the syndrome of ovarian dysfunction there are pelvic pain, menorrhagia, metrorrhagia, cystic ovaries, tender ovaries, tender uterus, dyspareunia, infertility and nervous exhaustion.

Pelvic pain may arise from disturbances in structure and function of the bones, joints, muscles, ligaments and fasciae of the trunk, pelvis and lower extremities (disturbances of the nervous system, blood vessels and viscera are not discussed here). The relaxation of the pelvic joints that precedes menstruation and accompanies pregnancy is a common cause of pelvic pain. A clinical method of measuring the motion of the intrapelvic joint has been presented by Pitkin.

In a discussion of the nervous pathways involved in pelvic pain, Wilson and Mussey discussed somatic innervation, which includes both the sensory and the motor nerve supply to the frame of the body. Visceral innervation is effected by the autonomic, or involuntary, nervous system. It is stated that pain is but one of the sensations carried by sensory nerves. *Cutaneous pain is always of the same* quality, no matter what the reason for it may be, and is not difficult to localize. Even with combined reflex and direct sympathetic nerve response to pain, the pelvic organs remain relatively insensitive.

"Pelvic myalgia" is a term coined to describe a painful spasm of the piriformis group of muscles. The muscles that are affected either singly or in groups are (1) piriformis, (2) inferior gemelli, (3) superior gemelli, (4) obturator internus, (5) gluteus medius, (6) levator ani and (7) coccygeus. In attempting to diagnose such pain by sweeping the finger laterally from the coccyx to the acetabulum and back to the coccyx several times, the entire surface area of the muscular ridge is massaged; gentle massage is continued in a plane perpendicular to the first maneuver, gradually working laterally to the acetabulum. These procedures are repeated on the opposite side. This treatment is beneficial in massaging the piriformis muscle.

Myalgia is one of those conditions causing pain not usually associated with the pelvis, and without careful digital examination the pain probably would not be exaggerated by the maneuver. Powell stated that *in about 10 per cent of these* cases the pain is made worse temporarily by this maneuver, but that massage should be continued at intervals until the condition subsides.

It must be stressed that pelvic myalgia is not a clinical entity but a complication of posterior urethritis, an anal or rectal pathological condition or an orthopedic defect.

The object of nerve resection and nerve block for gynecologic disorders is nearly always the relief of pain.

As has been stated, Leriche, in 1921, introduced periarterial sympathectomy of the internal iliac (hypogastric) artery for the relief of pelvic pain and obtained good results. In 1924 Cotte noted that if he sectioned the superior hypogastric plexus *(presacral nerve of Latarjet) he obtained* results as good as those obtained by Leriche. Latarjet, in 1913, described and named the presacral nerve as a distinct nerve.

The intrapelvic organs in which the abdominopelvic pains originate are innervated exclusively by the autonomic nervous system, most of them — the uterus, salpinges, rectum, bladder and probably the pelvic peritoneum — through the plexus hypogastricus; the ovaries, through the plexus ovaricus.

The pains of dysmenorrhea usually begin on the same day as the hemorrhage, but not infrequently earlier.

It is unfortunate that so many patients, and far too many doctors, are imbued with the idea that the only solution for many of the ailments of women, especially for chronic pain and discomfort in the abdominopelvic region, is surgical. Much is attributed to postoperative adhesions, but it should be remembered that adhesions cause pain only when there is obstruction or traction and that adhesions between tubes and ovaries, uterus and bowel, and bowel and bowel do not cause pain. Women who complain of chronic low abdominal or abdominopelvic pain are "pushed around," medically and surgically speaking, much more than are any other group of patients. This will continue until more thorough investigations become routine.

Conservative pelvic treatment, particularly pelvic surgical treatment, is a function to be carried out in the office. It is not always the function of the pelvic surgeon to order his patient to the operating room.

The term "somatic innervation" applies, of course, to both the sensory and the motor nerve supply to the frame of the body. At present the concern is with the sensory somatic innervation, and it will be necessary to recall, in general terms, the origin and course of a sensory nerve. A spinal nerve arises from a segment of the spinal cord and is composed of an anterior (motor) root and a posterior (sensory) root. In the posterior nerve root is the spinal ganglion, in which are located the nutrient cells of the sensory apparatus. (This ganglion will be mentioned again in connection with the so-called sympathetic sensory nerves.) After a short course as a single nerve trunk, each spinal nerve divides into anterior and posterior branches (or rami), which contain both sensory and motor components. Thirty-one such spinal nerves, comprising eight cervical, twelve thoracic, five lumbar and five sacral nerves and one coccygeal nerve, are present on each side of the body.

Visceral innervation is effected by the autonomic or involuntary nervous system. Below the sacral promontory the superior hypogastric plexus becomes the middle hypogastric plexus, and the latter divides at the level of the first sacral vertebra to form the bilateral inferior hypogastric plexuses.

One of the most frequent and trying problems in gynecology is presented by the patient with a history of pain for which the physician can find no satisfactory organic cause. Minor deviations from the absolute norm, such as a retrodisplacement of a freely movable uterus, cervical hypertrophy or a slightly enlarged ovary, may be present.

Menninger has pointed out that surgical therapy is often sought by patients who fear something else more than they fear an operation. The close connection between mental states and the functioning of various organs is well established. Many physical symptoms find their underlying cause in emotional disturbances affecting the autonomic nervous system, either directly or indirectly by way of the endocrine system. Emotional factors may play the same role in the production of pelvic pain as they play in the production of so-called tension or migrainous headaches. Wolff has shown that migraine headaches are vascular in origin and develop in three distinct phases:

(1) the vasoconstriction phase, which is brief and does not cause pain; (2) the vasodilation phase, which is the immediate cause of pain in that pain-sensitive structures surrounding certain vessels are stretched or pulled upon, and (3) the edema phase, which follows the vasodilation phase and lasts a considerable time.

In 1889 Goodell, in an article entitled *The Abuse of Uterine Treatment Through Mistaken Diagnosis,* condemned local treatment of the pelvic organs and suggested treatment directed at the nervous system. Goodell further stated that one of the grandest discoveries in the treatment of the nervous phase of women's diseases is the rest cure, for which the profession owes a large debt of gratitude to Weir Mitchell. One should not overlook the fact that every effort at diagnosis should be made before resorting to the psychiatric approach. It is desirable to inquire into the true nature of the pain. Wolff stated that Aristotle described pain as the "passion of the soul." Hardy, Wolff and Goodell observed that distraction, suggestion and hypnosis may raise the pain threshold by as much as 35 per cent. Pain is generally described as organic or functional; it might better be described as somatogenic or psychogenic. In the development of a psychosomatic disorder there are three requisites: (1) a psychoneurotic predisposition, (2) an exciting emotional conflict and (3) restriction of outward expression of the conflict.

It should not be overlooked that pain is a symptom common to all parts of the body. The genital tract is, of course, no exception. It is estimated that pelvic pain accounts for at least 35 per cent of the admissions to a gynecologic ward. The urologic system or phase should not be overlooked by anyone at any time in diagnosing obscure pains in the pelvis or the lower part of the abdomen, especially if the complaint is chronic.

Pain, as Mengert has classified it, might be categorized as follows:

Pain of genital origin

1. Pain due to gonorrhea, pelvic inflammatory disease, pelvic cellulitis or hemorrhage.
2. Pain due to uterine prolapse, adhesions, twisted pedicle of ovarian cyst
3. Pain due to periodic distention of an endometrial implant
4. Pain caused by tumor incarcerated in the pelvis
5. Pain accompanied with rupture of uterus, tube or bladder.

Pain of extragenital origin

1. Pain originating in pelvic neurosis
2. Pain originating in other pelvic structures: (a) bony, sacroiliac; (b) urinary tract, or (c) intestinal tract: colitis, diverticulitis, appendicitis.

Hemorrhage from a ruptured follicle, a cyst of the corpus luteus or ovulation may at times be confusing. Chronic pelvic pain is often the result of pathologic change in the cervix. Deep-seated dyspareunia is frequently due to a chronic disease of the cervix. Uterine prolapse of the second or third degree can cause pain by producing the dragging-down sensation. A retrodisplaced uterus is not looked upon as a cause of pelvic pain nearly as often as it formerly was.

There is grossly little clinical or pathologic similarity between adenomyosis and the large "chocolate cyst" of the ovary.

An idea commonly accepted by the laity is that pelvic pain indicates disease of the female organs. The majority of women seen by the gynecologist seek medical attention because of pain low in the abdomen or the back. The investigation of pelvic pain, therefore, may be time-consuming and expensive, but the patient still merits a detailed survey before an exploratory operative procedure or any nonindicated drug therapy is employed. The gynecologic diseases causing pelvic pain might be listed as: (1) cervicitis and parametritis; (2) uterine enlargement; (3) pelvic endometriosis; (4) malposition of the uterus; (5) pelvic congestion, and (6) adnexal disease. Cervicitis is manifested by erosion, hypertrophy, eversion, cystic change and laceration. Enlargement of the uterus causes backache and abdominal pain because of pelvic congestion due to the stretching of supportive ligaments, due in turn to the increased size of the uterus.

Endometriosis of the pelvic viscera has a high place among gynecologic causes of pelvic pain. Gynecologists are becoming more keenly aware of this condition, and the diagnosis is much more frequently made in recent years than it formerly was.

The presence of tender cul-de-sac nodules, a retroverted, tender uterus and fixed adnexae in a patient who complains of backache, pain in the lower part of the abdomen, dysmenorrhea and dyspareunia offers strong evidence that endometriosis is present. Uterine malposition, particularly prolapse, is a frequent cause of low abdominal pain and backache. Taylor amplified the concept of pelvic congestion as a cause of pelvic pa [illegible] d a "congestion fibrosis" caused by vascular and tissue congestion in the pelvic structures.

In the treatment of pelvic pain, the correct diagnosis should be made first if possible; next, each point of pathologic change should be recognized and treated accordingly. For endemetriosis, which causes so much pain, it has been suggested by Greenhill and others that testosterone be given in doses of 25 mg. three times weekly for four weeks. After a rest period of three to four weeks this therapy is repeated.

In summary, we might say that every patient with pelvic pain should be carefully studied. This may require two or more office examinations. No set rule should be adhered to absolutely. Each patient must be treated individually.

CONCLUSIONS

Pain is one of the most frequent symptoms that bring women to the physician. Pelvic pain is responsible in the greater percentage of such cases.

Ovulation causes pain more frequently than is suspected.

Carcinoma of the uterus, either the body or the cervix, is notoriously asymptomatic.

Ruptured ectopic pregnancy is a frequent cause of severe pain associated with shock.

Thrombophlebitis as a cause of pains in the pelvis or broad ligaments should not be overlooked.

Pelvic inflammatory disease is a frequent cause of pain, either acute or chronic.

Tuberculosis of the tubes should not be overlooked in diagnosis or differential diagnosis.

Sympathectomy and intraspinal injections of alcohol may be beneficial in cases of severe pelvic pain of the intractable type.

Intraperitoneal rupture of tubo-ovarian abscess is a major catastrophe. Extensive attempts to carry out pelvic drainage should be resisted.

Injuries from birth trauma, cystocele, rectocele and uterine prolapse should not be overlooked.

Pain is now accepted by some as a sixth and separate sense, apart from the primary senses, sight, hearing, taste, smell and touch.

Nerves supplying the pelvis, urinary tract, etc., are of three types: somatic or cerebrospinal, sympathetic and parasympathetic.

Myalgia is a condition not usually observed in the pelvis but affecting certain muscles—the piriformis group, piriformis inferior and the superior gemelli, the obturator internus, the gluteus medius, the levator and the coccygeal.

Pain caused by stones, ureteral strictures and infection of the urinary tract should always be eliminated before radical operation is performed prior to diagnosis.

SCHLUSSFOLGERUNGEN

Der Schmerz gehört zu den häufigsten Krankheitserscheinungen, die die Frau veranlassen, einen Arzt aufzusuchen. In der Mehrzahl der Fälle handelt es sich um Schmerzen im kleinen Becken.

Der Follikelsprung ruft häufiger Schmerzen hervor, als allgemein angenommen wird.

Der Krebs des Gabärmutterkörpers und-halses verläuft bekanntlich symptomlos.

Der Durchbruch einer extrauterinen Schwangerschaft ist häufig die Ursache heftiger mit Schock einhergehender Schmerzen.

Die Thrombophlebitis sollte nicht als Erreger von Schmerzen im kleinen Becken oder in den Ligg. lata ausser Acht gelassen werden.

Auch die Tuberkulose der Eileiter verdient Berücksichtigung in der Differentialdiagnose.

In Fällen von heftigen unbeeinflussbaren Schmerzen kann die Sympathektomie und

die intraspinale Alkoholeinspritzung von Nutzen sein.

Der Durchbruch eines Abszesses des Eileiters oder des Eierstocks in die Bauchhöhle stellt eine Katastrophe grösseren Ausmasses dar. Man sollte sich nicht zu umfangreichen Versuchen, eine Drainierung des Beckens auszuführen, verleiten lassen.

Durch die Entbindung hervorgerufene Verletzungen, Zystozelen, Rektozelen und Vorfall der Gebärmutter sind Erkrankungen, die nicht übersehen werden dürfen.

Der Schmerz wird heute von manchen Autoren als ein von den übrigen Sinnen (Gesicht, Gehör, Geschmack, Geruch und Gefühl) getrennter sechster Sinn aufgefasst.

Es gibt drei Arten von Nerven, die das Becken, das Harnsystem usw. versorgen: die somatischen oder zerebrospinalen, die sympathischen und die parasympathischen.

Myalgien werden im Becken gewöhnlich nicht beobachtet, können aber gewisse Muskeln befallen: die Piriformisgruppe, den unteren Piriformis und die oberen Zwillingsmuskeln, den Obturator internus, den Glutaeus medius, den Levator ani und den Coccygealis.

CONCLUSOES

A dôr é um dos sintomas que mais frequentemente levam a mulher ao médico. A dôr pélvica é responsável na maior porcentagem dos casos. A ovulação causa mais dor do que se supõe habitualmente. O carcinoma do utero, do corpo ou do colo uterinos, é notoriamente assintomático.

A rutura de prenhês estópica também é uma causa frequente de dôr associada com choque. Não deve ser desprezada a possibilidade de uma tromboflebite como causa de dôr pélvica ou dos ligamentos largos.

No diagnóstico diferencial não deve ser esquecida a tuberculose tubária. Nos tipos de dôr incuravel a simpatectomia e as injecções de alcóol intraraquídeas podem sem benéficas.

A rutura intraperitoneal de um abcesso tubo-ovariano constitue uma grande catastrofe. Devem ser evitadas manobras largas para obter drenagem pelvica. As lesões obstétricas, a cistocele, a retocele e o prolapso uterino não devem passar desapercebidos. A dôr é atualmente considerada por alguns como um sexto sentido isolado dos elemtnos sensoriais (visão, audição, gustação, olfacção, gustação e sensibilidade tactil).

A inervação da pelvis, do aparelho, urinário, etc., é de três tipos; somático ou cerebro-espinhal, simpático e parasimpático.

A. mialgia não é habitualmente observada na pélvis mas pode atingir certos musculos: o grupo piriforme, o piriforme inferior os gemeos superiores, o obturador interno, o médio gluteo, o elevador do anus e o coccigeâno. O diagnóstico de dôr produzida por cálculos, estreitamento ureteral ou infecção urinária deve sempre ser estabelecida antes da operação radical.

CONCLUSIONES

El dolor es uno de los síntomas que mas frecuentemente traen a las mujeres al médico. El Dolor pélvico es responsable en'la mayoría de los casos.

La ovulación causa dolor mas frecuentemente de lo que se cree.

El carcinoma del ùtero, tanto del cuerpo como del cervix, es notoriamente asintomático.

Un embarazo ectópico roto es causa frecuente de dolor asociado con shock.

No debe pasar inadvertida la trombo flebitis como causa de dolor en la pelvis ó en los ligamentos anchos.

La tuberculosis de las trompas no debe dejarse inadvertida en diagnósticos ó diagnósticos diferenciales.

La simpatectomía y las inyecciones intraespinales de alcohol pueden ser beneficiosas en casos de dolor [illegible]l tipo intratable.

La ruptura intraperitoneal de un absceso tubo-ovárico es una catástrofe mayor.

No deben pasar inadvertidos lesiones por trauma del parto, cistocele, rectocele y prolapso uterino.

Los nuvrios que inervan la pelvis, el tracto urinario, etc., son de tres tipos: somático ó cerebroespinal, simpático y parasimpático.

CONCLUSIONS

La douleur—et plus spécialement la douleur pelvienne—est l'un des symptômes les plus fréquents qui amènent les femmes chez le chirurgien.

L'ovulation est plus souvent douloureuse qu'on le pense.

Il est notoire que le carcinome de l'utérus—du corps ou du col—est asymptomatique.

La grossesse ectopique rupturée est une cause fréquente de douleurs s'accompagnant de choc.

La thrombophlébite ne devrait pas être négligée en tant que facteur de douleurs dans les ligaments pelviens ou les ligaments larges.

Il faut envisager la possibilité d'une tuberculose des trompes lors du diagnostic différentiel.

La sympathectomie et les injections intrarachidiennes d'alcool peuvent être utiles dans les cas de douleurs rebelles.

La rupture d'un abcès tubo-ovarien est une catastrophe. Il est à conseiller de s'abstenir dans ces cas d'une tentative de drainage étendu.

Il faut songer aussi lors du diagnostic à des lésions traumatiques lors de l'accouchement, à une cystocèle, à une rectocèle et à un prolapsus utérin.

Les nerfs innervant le bassin, le système urinaire, etc, sont de trois types: somatique ou cérébrospinal sympathique et parasympathique.

La douleur musculaire est rarement observée, mais elle peut atteindre certains muscles, tels que le piriforme, le piriforme inférieur et les jumeaux supérieurs, l'obturateur interne, le fessier moyen, les releveurs de l'anus et le coccygien.

CONCLUSIONI

Il dolore è una delle più importanti ragioni per cui le donne consultano il medico. Nella maggioranza dei casi si tratta di dolori pelvici.

L'ovulazione è una causa di dolore molto più frequente di quanto non si pensi. Il cancro dell'utero, così del corpo come del collo, è del tutto asintomatico. La rottura di gravidan za tubarica è una causa frequente di dolare molto intenso associato a stato di shock. Non bisogna trasurare neppure la tromboflebite come causa di dolore nella pelvi o nei legamenti larghi. La tubercolosi della tuba deve essere considerata nella diagnosi differenziale.

Nei dolori intensi che non risentono della terapia si deve prender in esame la possibilità di una simpaticectomia lombare o della iniezione di alcool intraspinale.

La rottura intraperitoneale di un ascesso tubo-ovarico è una delle condizioni più gravi che possano verificarsi.

Non si devono trascurare le lesioni da trauma ostetrico, il cistocele, il rettocele e il prolasso dell'utero.

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Primary Carcinoma of the Fallopian Tube

Report of a Case

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THE rarity of primary carcinoma of the fallopian tube prompts this report. This is one of the rarest of all malignant diseases. Only a few over 500 cases have been reported in the literature[1] up to the time of writing. The diagnosis is seldom made before operation.[2] A greater familiarity with this subject on the part of more surgeons is desirable, because this lesion is one of the most malignant of body cancers.[3]

Incidence.—The reported incidence varies between 0.31 per cent and 0.5 per cent of female pelvic malignant tumors.[4] In one controlled series of 12 cases, it was as low as 0.16 per cent. The lesion has been observed in patients from 17 to 80 years of age. About three-fourths of the patients in the cases reported were past the menopause and were nulliparous. Wechsler reported that two-thirds of his patients were between 40 and 45 years of age, and Hu stated that most of his were between 40 and 65.[4a] Raynaud is given credit by some authors for recording the original case in 1847. By others, the credit is given to Orthman (1886) for the first description.[4a]

Pathologic Picture.—The pathologic picture was first described by Rokitansky in 1861.[5] In the cases reported the tumor has been adenocarcinoma.[1b] It arises in the mucous membrane and shows a papillary pattern. It usually causes the formation of a hydrosalpinx, and the symptoms are those of inflammation of the fallopian tube.[1a] Spread may take place by lymphatics, blood stream, direct extension and peritoneal implantation. It is similar to the spread of ovarian malignant neoplasms and often involves the retroperitoneal route to the presacral nodes.[6] The carcinoma is often not discovered until the tube is opened. The lesion is usually in the distal two-thirds of the tube and often is associated with tuberculosis in the tube.[1a] In a few cases it has been diagnosed by Papanicolaou smear before operation.[7]

Prognosis.—In about 25 per cent of cases recurrence has taken place in one year.[1a] Survival rates have been discouraging; less than 4 per cent of the patients were reported to have survived for three years.[4a] Haupt reported only 6 survivals among 321 patients in eight years.[1a]

Symptoms.—Authors agree that pain is an early symptom. The pain may be sharp and intermittent or persistent and dull. It is usually located in the region of the affected tube and in the back.[4] Occasionally it is referred to the bladder or the rectum or radiates down the leg.[8]

A mass is usually palpable in the pelvis or the abdomen, and the lesion may be confused with salpingitis, ovarian cyst, myoma of the uterus or ectopic pregnancy.[9] Occasionally the mass may disappear or become smaller after a vaginal discharge.[4a] Vaginal discharge of some kind is usually present and may vary from leukorrhea to bleeding. Any serous or serosanguinous discharge from the cervix should cause s [illegible] ee lesi

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From the Hadley Memorial Hospital, Washington, D. C.
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can cause this type of discharge: (1) carcinoma of the uterus; (2) hydrops tubae praefluens, and (3) primary carcinoma of the fallopian tube.[4a] Whenever a pain in the lower part of the abdomen is relieved by discharge, the presence of an extrauterine carcinoma should be suspected, especially if the endometrium is normal after curettage and if a palpable mass becomes smaller after discharge.[1a]

Treatment of Choice.—Bilateral salpingo-oophorectomy with panhysterectomy and retroperitoneal node dissection is the treatment of choice.[10] Postoperative roentgen therapy is usually given.

REPORT OF A CASE

J. S., a 28-year-old nullipara, weighing 230 pounds (104.3 Kg.) complained chiefly of pain in the left lower abdominal quadrant, of several months' duration, and a foul vaginal discharge, which often relieved the pain. The pain was lessened by bed rest or douching. The patient was seen in March 1954 by a private physician after symptoms of two to three months' duration. On the recurrence of pain two weeks after bed rest, the patient was admitted to Hadley Memorial Hospital on April 7, 1954. Examination revealed a palpable mass in the left adnexal region, about the size of a grapefruit. The menstrual periods were regular except for several days of blood-tinged discharge after periods. A Papanicolaou smear was not done.

On April 8 a laparotomy was done with the patient under general anesthesia. The left fallopian tube was large and bound down with adhesions, and had a number of blood vessels running to it. The wall was thickened and smooth. The pathologic impression was that of hydrosalpinx. The right fallopian tube was bound down in the cul-de-sac and distended in the distal half. The left ovary was

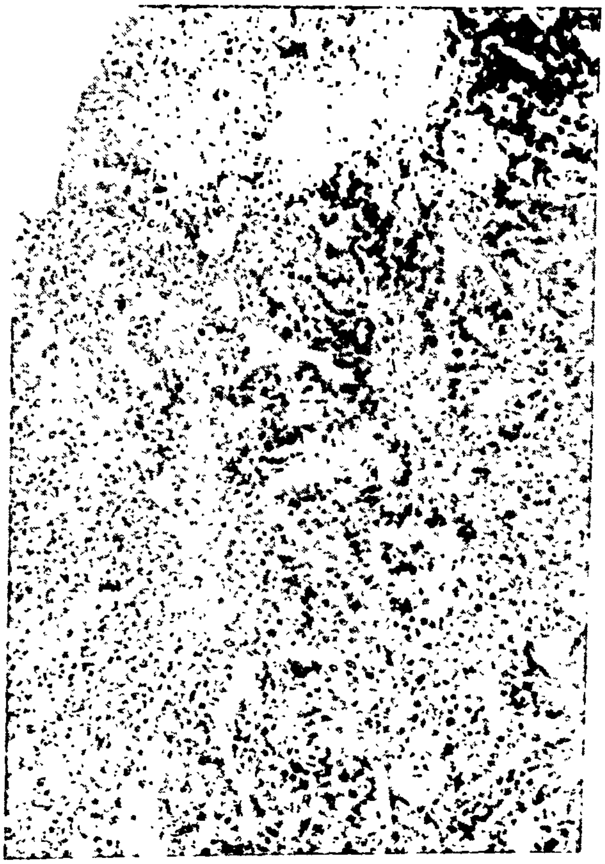
Fig. 1.—Primary carcinoma arising from wall of fallopian tube. Note papillary pattern and cytologic abnormalities.

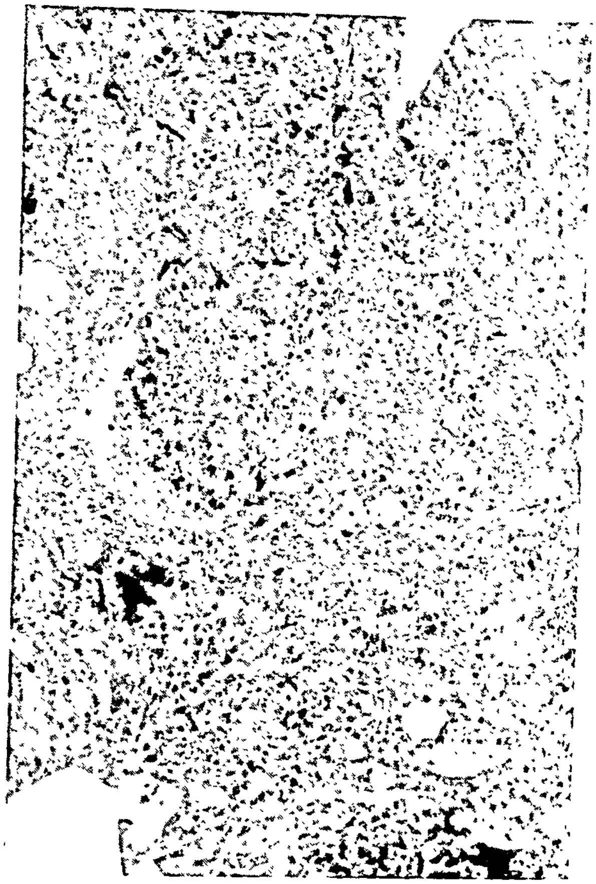
Fig. 2.—Primary carcinoma arising from wall of fallopian tube. Some mitotic figures are present.

enlarged and cystic. The right ovary was normal, as were the uterus and the appendix.

A left salpingo-oophorectomy was done. The distal end of the right fallopian tube was removed. Appendectomy and plastic repair of the proximal end of the right tube were performed. The specimen was not opened at operation, and a frozen section was not done. No other evidence of pathologic change was noted.

After the routine processes of pathologic examination, a diagnosis of primary carcinoma of the fallopian tube was made, and the patient was relaparotomized on May 7. A wide panhysterectomy with right salpingo-oophorectomy, node dissection and high ligation of the ovarian vessels was done. No evidence of metastasis was detected.

Pathologist's Report: Pathologic examination of the left fallopian tube revealed tissue measuring 13 cm. in length and with diameters ranging from 3 to 6.5 cm. The outer surface was irregular in contour. The structure appeared to be a tremendously distended fallopian tube which, in one area, had the appearance of having become an abscess. Section into this larger area revealed the tissue within to be gray-yellow and extremely friable. Section through the portion that was less enlarged, revealed within it structures that were still fairly soft and showed no definite tubal topographic features. At one end of this mass was what appeared to be ovarian tissue, consisting of variegated color cysts.

The right tube measured 8 by 2 to 3 cm. and had a central lumen. The appendix was not remarkable in appearance. The smooth-walled cyst measured 4 by 2.5 by 2 cm., contained clear yellow fluid and had a smooth inner surface.

Microscopic sections from the left tube revealed a neoplasm containing fairly large cells with dark-staining cytoplasm and fairly large and uniform nuclei, with a moderate number of mitoses. Arrangement of the cells in papillary and glandular formation was also noted. Adjacent to the tumor, which was extensive, were areas of necrosis and areas of inflammation. The stroma about the tumor consisted of muscular and fibrous tissue, which was not definitely identifiable, and ovarian or fallopian tube structure. Occasional cystic structures lined with low columnar epithelium were seen. The diagnosis was adenocarcinoma of the fallopian tube.

Pathologic study after the second operation revealed (1) chronic cervicitis and hyperplastic endometrium in the secretory phase of activity, (2) ovarian tissue and (3) fallopian tube.

Roentgen Picture: Roentgenograms of the chest and an intravenous pyleogram in follow-up gave negative results. The patient was given a course of high voltage roentgen therapy by a private radiologist.

Follow-Up: Two years and nine months after the operation the patient began complaining of severe pain in the back, the right lower abdominal quadrant and the lower extremities. She also complained of increased obesity.

Examination revealed abdominal swelling, enlargement of the liver and a mass in the neck. With this evidence of metastasis, the prognosis is grave.

SUMMARY AND CONCLUSIONS

Primary carcinoma of the fallopian tube is one of the rarest of all malignant diseases and is seldom diagnosed before operation or autopsy. Pelvic pain, a palpable pelvic tumor and a vaginal discharge that often relieves the pain intermittently are suggestive of extrauterine malignant change. The treatment of choice is bilateral salpingo-oophorectomy with wide panhysterectomy and node dissection. High voltage roentgen therapy is advocated but of doubtful value.

RÉSUMÉ ET CONCLUSIONS

Le carcinome primaire des trompes de Fallope est une des tumeurs malignes les plus exceptionnelles, et il est rarement diagnostiqué avant l'opération ou l'autopsie. Les douleurs pelviennes, une tumeur pelvienne palpable, et un écoulement vaginal provoquant souvent une atténuation intermittente des douleurs, indiquent une modification extra-utérine maligne.

Le traitement de choix est une salpingo-oophorectomie bilatérale avec panhystérectomie avec dissection nodulaire. Une thérapeutique de rayons X à hautes doses est préconisée, bien que leur efficacité apparisse douteuse.

RIASSUNTO E CONCLUSIONI

Il carcinoma primitivo della tuba è una fra le più rare neoplasie maligne ed è molto raramente diagnosticato prima dell'intervento o dell'autopsia. I segni clinici probativi di questa affezione sono rappresentati dal dolore pelvico, da un tumore palpabile nella pelvi e da una secrezione vaginale intermittente che spesso allevia il dolore.

Il trattamento di scelta è la salpingo-ooforectomia bilaterale con panisterectomia e dissezione dei linfatici. Si consiglia anche la roentgenterapia ad alto voltaggio, ma con risultati incerti.

RESUMEN Y CONCLUSIONES

El carcinoma primario de las Frompas de Falopio es una de las enfermedades malignas mas raras y pocas neces se diagnostica antes de operación ó autopsia. Dolor pelviano, tumor pélvico palpable y flujo vaginal que alivia el dolor intermitentemente son sugestivos de malignidad extrauterina.

El tratamiento de elección es la salpingo ó oforectomía bilateral con panhisterectomía y disección de ganglios linjáticos. La radiate rapia aunque aconsejada, es de valor dudoso.

ZUSAMMENFASSUNG UND SCHLUSSFOLGERUNGEN

Der primäre Krebs der Eileiter gehört zu den seltensten bösartigen Erkrankungen und wird kaum je vor der Operation oder Obduktion erkannt. Schmerzen im kleinen Becken, eine palpable Geschwulst und vaginaler Ausfluss, der oft zu vorübergehender Erleichterung der Schmerzen führt, deuten auf das Vorliegen einer extrauterinen bösartigen Erkrankung hin.

Die Behandlung der Wahl besteht in der Resektion beider Tuben und Eierstöcke, des gesamten Uterus und der Lymphknoten. Röntgenbestrahlungen mit hoher Spannung werden enpfohlen, obgleich ihr Wert fraglich ist.

SUMARIO E CONCLUSOES

O carcinoma primitivo das trompas é uma das afecções malignas mais raras e é muitas vezes diagmostica antes da operação e da necropsia. A dor pelvica, um tumor palpavel e as perdas vaginais com dor intermitente são sugestivas. O tratamento de escolha é a salpingo-ooforectomia bilateral com panhisterectomia e exérese ganglionar. A radioterapia com alta voltagem é indicada porém de valor incerto.

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Ophthalmologic Surgery

The Beta Applicator as an Ophthalmic Therapeutic Tool*

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IN order to consider beta radiation as a therapeutic tool, one must first understand something of its mode of action. The following facts are pertinent:

To be effective, radiation must be absorbed by tissue, not just pass through. High energy radiations, therefore, pass through the anterior segment of the eye with too little absorption to be therapeutically effective, but beta particles from radium, radium D, radon and radioactive strontium penetrate only superficially and are absorbed by the tissues of the anterior segment.

This absorption releases energy in each tissue cell involved, causing damage by ionization, especially in the nucleus, to a degree that varies with the dose. This damage can result in cellular death either from an overwhelming single dose or from cumulative effects. Damaging effects from smaller doses, however, may permit tissue recovery, but, reversible or not, the effect of radiation is always to damage, if not to destroy.

Indications.—Pterygium is the most common indication for beta therapy, and both the primary and recurrent forms are treated the same way. Beta radiation is used postoperatively rather than as the only treatment. This not only reduces the dosage considerably but improves the cosmetic result. The usual procedure is to resect the pterygium, leaving a large bare area of sclera, which is then partially closed along a horizontal line by mobilizing the conjunctiva. A bare scleral crescent remains near the limbus, however, and it is here that the postoperative irradiation is applied, causing subsequently a tight, avascular scar, across which recurrence is rare. As a rule, this requires two beta treatments, one about five days after the operation and again in three or four weeks, especially if there is a tendency to some limbal vascularization at some particular point during this time.

Beta radiation alone can be used to stop the progression of pterygium, reducing it to a dense, inactive scar. This scar is white, however, and not cosmetically satisfactory. For this reason and because considerably more radiation is needed to effect this change than to prevent recurrence after operation, beta irradiation is not recommended as an exclusive and primary treatment of pterygium, but should be used postoperatively.

Chronic inflammatory tumor or excess granulation tissue also can [illegible] th beta therapy. These oc [illegible] sma [illegible] io

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the palpebral conjunctiva. They frequently arise at the site of a secondarily infected chalazion, but occasionally appear in the fornices or the bulbar conjunctiva as large masses of tissue, sometimes pedunculated. They contain numerous lymphocytes but can be differentiated from lymphomas, and they respond quite well, often dramatically, to local irradiation with the beta applicator.

Neoplasms of the lids and conjunctiva respond to beta therapy, with varying degrees of success, and will be considered separately.

Papillomas, verrucae and *condylomas* are somewhat resistant to primary therapy but respond well to excision down to skin level, followed by immediate irradiation of the base. The postoperative site should be observed in three or four weeks for signs of recurrence and irradiated again accordingly. This method combines the diagnostic advantages of excisional biopsy with the tissue-saving advantages of local radiation therapy. Even with a very small lesion, this can be very important if it is on the lid margin, where wide excision of the base would create a cosmetic blemish.

Angiomas, except for the small, superficial variety, are not suitable for beta radiation therapy. And even these, including small strawberry naevi, although responsive to irradiation, are often better observed than treated, since most of them in infants will regress spontaneously, thus precluding some of the undesirable but common side-effects of radiation on the skin, such as slight changes in tissue texture, depigmentation, epilation and possible telangiectasis. On the face, especially, these side effects are to be avoided whenever possible. Nevertheless, some angiomas may ulcerate and require treatment; but these are seldom small or superficial enough to benefit from beta irradiation, except sometimes locally in the ulcerating areas, where it is possible to deliver a fairly high dosage within a very small and superficial area.

Epithelial plaques and *cutaneous horns* frequently have basal cells that are premalignant. The plaques and horns themselves are not sensitive to radiation and are prone to recur after simple excision, but they are effectively treated by the combination of immediate beta irradiation after excision down to the base.

Bowen's disease or *carcinoma in situ* of the cornea or conjunctiva responds readily to beta irradiation as a primary therapeutic procedure. In some cases, with excessively thick lesions, much time and irradiation will be saved by simple excision of the excess tissue prior to beta application, providing also the added advantage of biopsy material. Excision without postoperative irradiation, however, is frequently followed by recurrence.

Basal cell and *squamous carcinoma* of the lids are not suitable for beta irradiation and should be treated by roentgen or surgical therapy. Occasionally larger lesions will benefit from superficial and subtotal beta irradiation to reduce the size of the tumor and increase the total tumor dose without additional radiation danger to normal surrounding tissues. This, however, should be done only as a preliminary procedure to other, final treatment. Smaller conjunctival or limbal carcinomas are amenable to beta therapy but should always be biopsied to establish the diagnosis.

Vernal conjunctivitis can sometimes be relieved by local steroids and symptomatic therapy, and in these cases beta radiation should be avoided. But as a last resort, when other treatment is inadequate, beta therapy can be used to control symptoms in both palpebral and limbal types. Although it is quite possible to destroy the vegetations with radiation, it is neither necessary nor desirable to do so. Since the condition is eventually self-limited, only the smallest amount of radiation that will give symptomatic relief should be used. This will usually call for considerable patience, since weeks frequently grow into months as enough time is allowed to evaluate the response to therapy. I often predict to patients that little relief will be obtained from beta radiation this season, but by next year the symptoms will usually be less severe. After that, control may be achieved with relatively small doses of radiation.

Corneal vascularization is still frequently an important indication for beta therapy, but with some definite restrictions. Corneal vascularization alone is not an adequate indication for treatment, and it is usually wise to observe the following indications: 1. The blood vessels in the cornea must be superficial, that is, in the naterior third of the stroma. 2. They should be actively blood-bearing. 3. They should be symptomatic, with corneal edema, producing haziness or irritability, sometimes with recurrent erosions. 4. Before radiation is begun, the inflammatory process, which stimulated the vascularization in the first place, should be in remission, or in other words, the corneal vessels must have served their purpose and no longer be needed.

Since irradiation may be used to destroy corneal vascularization before keratoplasty, it is well to restate the general rule that wound healing can be seriously delayed by previous beta therapy.

When corneal vessels are large and superficial, considerable radiation dosage and time can be saved by coagulation of the trunk vessels at the limbus, using the Hildreth or other convenient form of cautery, followed by beta irradiation to prevent recurrence.

Opacity due to scars cannot be cleared by irradiation, and in most cases of corneal vascularization the control of symptoms and the clearing of the corneal haze are the objectives of beta therapy. It is therefore wise to proceed slowly with beta therapy and to discontinue it when symptomatic relief is obtained.

Corneal ulcers, phlyctenulosis, epithelial keratitis, stromal herpes and *scleritis* sometimes appear to respond favorably to low dosages, but results are variable and difficult to evaluate; moreover, they necessitate an extremely conservative attitude toward beta radiation as their treatment. Epilation for *trichiasis* has some limited use but requires great accuracy of administration, because of the close relation of permanent epilation and skin erythema dose.

Contraindications.—At present, the following conditions are considered contraindications to beta radiation therapy: corneal dystrophy, lupus erythematosis, ocular pemphigus, active infection or keratitis, sarcoid, naevus, and, of course, other conditions for which beta therapy is simply inadequate or unnecessary, such as dermoids, pinguecula, preoperative pterygia, tumors too large or deep to treat, deep or silent vascularization of the cornea, and corneal scarring.

Administration.—Because of the advantages and convenience of the strontium applicator, it has almost replaced applicators using other source materials of similar depth dose. For very superficial use, the radium-D applicator reduces the lens hazard but is otherwise limited.

The various strontium applicators vary somewhat in design, but fundamentally they are similar. Recent models have proved to be easier to use than the older ones, because of a smaller active-face diameter and more potency.

Because of goemetric variations and variations in the physical calibrations of beta applicators, dosages are calculated on the basis of applicator performance. In some cases this has been by [illegible] but a more accurate method

TABLE 1.—*Comparison of Dose-Rates and Variations of the Minimum Inflammatory Doses as Determined on Rabbit Corneas for Various SR-90 Applicators*

Applicator Number	*Dose-Rate (REP./second)*	*Minimum Inflammatory Dose-REP.*
29	22.9 (1951) 20.0 (1952) 16.7 (1953)	35,000 30,600* 25,500*
153	45.0 (1952) 29.3 (1953)	35,000 22,800*
179	28.3 (1952)	29,000
190	18.9 (1952)	24,000
221	51.8 (1952)	22,000
227	93.3 (1952)	20,000
T.O. 134	48 (1953)	20,000
538	90 (1954)	20,000
616	128 (1955)	19,000
S-256	125±10% (1956)	23,000

*Calculated from Re-calibration.

calibration is advisable. It is possible to translate into clinical dosage the minimal inflammatory dose (M.I.D.) for the rabbit cornea, described elsewhere.[1] Unless this is determined, it is necessary for the operator to proceed with great caution with each new applicator, because of variations in clinical effects that cannot always be predicted. Table 1 shows the inconstancy of the minimal inflammatory dose (M.I.D.) with different applicators, explaining some of their unpredictable clinical behavior.

Because of this and other factors, it is not possible to give dosage schedules, except in terms of M.I.D. (minimal inflammatory dose) or else in the most general terms, subject to much modification, depending on the clinical performance of each applicator and, of course, allowing for individual variation in the patients (Table 2).

Thus, although certain categories of indications and contraindications can be outlined, in the final analysis radiation should be used as sparingly as possible in all patients, but especially in the young; and every case considered for possible radiation therapy must be individualized, depending on whether the effect sought is worth the effect we obtained. Sometimes it is; sometimes not. Occasionally it may be difficult to decide, because of unassessable variables such as the exact levels of dosage for undesirable effects, individual variation in lesion and tissue sensitivity, inaccuracies in dosage calculations and unknown factors.

The minimal inflammatory dose for the human cornea, for example, is unknown. In the rabbit, this value has been an important parameter for standardizing beta applicators for ophthalmic use, but if it were not for the leveling effect of large numbers of rabbits available in the laboratory, individual variation in the rabbit cornea's response to radiation would render meaningless the minimal inflammatory dose. In the same way, attempts to evaluate individual response in the human eye may be subject to considerable inaccuracy.

Difficulties with dosage are compounded

by the additional variable of applicator dose rate. It is true that beta applicators are calibrated by the manufacturer, but a fluctuating M.I.D. from one applicator to another would seem to indicate inaccuracies in the methods of calibration used in the past (Table 1).

The physical measurement of beta radiation has been a complex, difficult problem, [illegible] for clinical purposes the need is for constancy of calibration rather than absolute accuracy. Table 1 indicates a definite trend toward a more nearly constant M.I.D. among some of the more recent strontium applicators. This is encouraging, and it may mean that physical methods of calibration will prove consistent enough to be clinically dependable. There is too much at stake, however, to accept this trend as fact until it is firmly established, especially since physical calibration has been unreliable clinically in the past, and biologic standardization of each new applicator has proved to be an adequate safeguard in dosage calculations prior to its use on human eyes.

Complications.—In beta-irradiated ocular tissues, late changes, such as telangiectasis and keratinization of the conjunctival epithelium, atrophy of the sclera, keratitis, corneal scarring and thinning, iritis, iris atrophy, and radiation cataract have been discussed by several authors.[2] Except for conjunctival telangiectasis, which I have seen following 6,000 rep, but which can occur in some persons after dosages under 5,000 rep,[2c] and also except for lens changes, to be discussed presently, the complications of beta radiation are the result of dosages that are frequent-

TABLE 2.—*Clinical Indication and Dosages in Terms of Minimum Inflammatory Dose (M.I.D.).*

	Average Total Dosage		
Condition	*M.I.D. Dosage Factor*	*Example for Applicator with M.I.D of 20,000 REP.*	*Comment*
Benign neoplasms	0.15 M.I.D.	3,000 REP.	2-4 fractions after excised to base
Carcinoma, basal, squamous	0.20	4,000	Preliminary, superficial, subtotal irradiation in single fraction
Carcinoma, Bowen's	0.30	6,000	4-8 fractions for early, thin lesion, or excised to base
Chronic inflammatory tumor	0.10	2,000	Small, single fractions guided by response
Granulation tissue	0.10	2,000	One or two treatments
Phlyctenulosis	0.03	600	Only for most persistent lesions
Plaque, epithelial	0.25	5,000	Excised to base with 2-3 fractions postoperatively
Pterygium	0.15	3,000	Treat at 5 days and 30 days after operation
Scleritis	0.05	1,000	Treat symptoms only
Trichiasis	0.08	1,600	Epilation dose about equal to S.E D.
Corneal ulcer	0.025	500	Better for more chronic types; use proximal spray technic
Vascularization, corneal	0.25	5,000	Superficial types only
Vernal conjunctivitis	0.09	1,800	Treat [illegible] onl

TABLE 3.—*Type and Character of Late Lens Opacities in the Rabbit After Experimental Irradiation of the Central Cornea*

				Lens Effects Years After Corneal Beta Irradiation		
Rabbit	*Radiation*	*Dose*	*M.I.D.*	*Lens Opacity*	*Time, Yr.*	*Comment*
52 R	SR-90	60,000	3	General subcapsular clouding, semi-transparent	4	Progressive ?
52 L	SR-90	30,000	1.5	Mature cataract	4	Perf. of cornea at 2 years
67 R	Radon	10 Gm. sec.	1	Postoperative subcapsular opacity, polychromatic	3½	Opacity progressive last 18 months
68 R	Radon	40 Gm. sec.	4	Granular stellate post-suture opacity	4	Nonprogressive
68 L	Control	0	0	Prominent post-suture lens clear	4+	Nonprogressive
107 R	Radon	5 Gm. sec.	½	Post-suture opacity	3	Nonprogressive
107 L	Radon	10 Gm. sec.	1	Post-suture opacity	3	Nonprogressive
111 R	Radon	2.5 Gm. sec.	¼	Post-suture opacity	3	Nonprogressive
113 R	Radon	5 Gm. sec.	½	Post-suture opacity	3	Nonprogressive
113 L	Radon	10 Gm. sec.	1	Sector opacity, treated area	3	Nonprogressive

ly higher than those necessary to obtain a desired clinical result.

There is no doubt that beta radiation from radium, radon and radioactive strontium can produce sector opacities in the lens, and mature cataracts have developed in several patients after beta therapy.[3] Mature cataract in man due to strontium irradiation has not been reported, however, although several authors,[4] including myself, have noted sector opacities.

The behavior of sector opacities is not fully understood, although some, certainly, may remain stationary for several years (Table 3). How these might affect the course of development of senile cataract is also unknown.

Lienfelder and Riley;[5] using as much as 12,000 r. of roentgen radiation, produced sector cataracts in exposed quadrants of rabbit lenses. They showed that partly irradiated, partly shielded lenses tolerated higher doses of irradiation without total cataract; that somehow the nonirradiated portions of the lens exerted an inhibitory effect on the progression of sector opacities.

In my series, although dense cataracts did develop in some rabbits, these were associated with very high doses of beta radiation or unusually severe corneal damage, presumably at times aggravated by cage trauma. Rabbits showing punctate opacities and granular stellate figures in the region of the posterior sutures, however, have been followed without progression for as long as three and four years and after higher doses than are used clinically (Table 3).

It is quite possible that many of the sector opacities observed after limbal irradiation in human eyes will be nonprogressive, but this is a matter for future, careful evaluation. Meanwhile, extreme caution must be used in administering this potent and potentially cataractogenic agent.

SUMMARY

The indications for ophthalmic beta irradiation are few but definite. Many of the undesirable side-effects are due to overdosage, but some, e.g., lens opacities, are not necessarily due to this cause. Experimentally, however, some focal opacities have been nonprogressive for years; *radiation cataract of clinical importance*, therefore, may not be so great a danger as is indicated by the frequency of sector opacities. Nevertheless, until this point is better understood, and always because beta radiation is a destructive agent, great caution and conservatism should be exercised in its use.

RÉSUMÉ

Les indications de l'irradiation oculaire (rayons beta) sont peu nombreuses mais bien définies. Un grand nombre de complications sont dues à un sur-dosage; d'autres, telles les opacités lenticulaires, peuvent avoir une origine différente. Certaines opacités focales expérimentales sont restées stationnaires durant des années; la cataracte par irradiation peut dont n'être pas un risque aussi grand que l'indique la fréquence des opacités par secteurs. Il faut néanmoins faire preuve de la plus grande prudence dans l'emploi des rayons beta.

RESUMEN

Las indicaciones de la beta irradiación son pocas pero bién definidas en oftalmología. Muchos de los indeseables efectos secundarios han sido debidos a sobredosificación aunque algunos, como por ejemplo las opacidades del cristalino, no sean necesariamente debidos a esta causa. Sin embargo, experimentalmente, algunas opacidades focales han permanecido es tacionarias durante varios años; la cararata por irradiación, de importancia clínica, puede no constituir un peligro tan grande como se dice por la frecuencia de las opacidades parciales. No obstante, hasta que esta cuestión sea mejor conocida, y puesto que la beta radiación es un agente destructivo su uso debe hacerse con prudencia y gran precaución.

ZUSAMMENFASSUNG

Es gibt bestimmte wenn auch wenige Indikationen zur Anwendung von Betastrahlen bei Augenerkrankungen. Viele der unerwünschten Nebenerscheinumgen sind auf Überdosierung zurückzuführen, manche wie z. B. Linsentrübungen sind jedoch nicht notwendigerweise dieses Ursprungs. Experimentell hat sich gezeigt, dass Herdtrübungen der Linse über Jahre hinaus keine Zeichen des Fortschritts aufwiesen; folglich sind klinisch bedeutsame Bestrahlungskatarakte vielleicht nicht so gefährlich wie man aus der Häufigkeit von Sektortrübungen annehmen könnte. Trotzdem ist grosse Vorsicht und Zurückhaltung in der Anwendung von Betastrahlen angezeigt, weil es sich um ein zerstörendes Mittel handelt und die oben erwähnten Komplikationen noch nicht klar verstanden werden.

SUMARIO

As indicações para o uso oftalmico das irradiações beta são poucas porém definidas. Muitos dos efeitos secundários indesejaveis são devidos ao uso de dose excessiva, existindo porém condições como opacidade da lente que não são necessariamente devidas a esta causa. Experimentalmente, entretanto, algumas opacidades focais mantiveram-se estacionarias durante anos. Catarata de irradiação de importância clínica não é um perigo tão grande

a terâpeutica como o indica a frequência de opacidades zonais.

Entretanto até que êste ponto seja entendido melhor e também porque as irradiações beta são sempre agentes destrutivos o seu uso deve ser cercado de grandes cuidados.

RIASSUNTO

Le indicazioni oftalmologiche delle beta irradiazioni sono poche ma ben stabilite. Molti degli effetti collaterali spiacevoli sono dovuti al sopradosaggio, ma alcuni di essi, come le opacità del cristallino, non sono necessariamente dovuti a questa causa. Sperimentalmente, invero, alcune opacità sono rimaste stazionarie per anni, ma le cataratte da irradiazione, di importanza clinica, possono non rappresentare un danno grave. Cionondimeno fino a che questo particolare non sarà meglio conosciuto si dovrà usare la massima prudenza nell'impiego delle irradiazioni beta.

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It has always seemed absurd to me that philosophers should have fancied a sort of virtue which conflicts with human nature, and having made this counterfeit, should have declared coldly that no such thing as virtue exists. If they speak of the phantom of their imagination, they are free (since it is their own creature) to renounce or destroy it; but real virtue that virtue they will not call by name because it does not square with their definition, that virtue which is nature's work, not theirs, and consists chiefly in the kindness and energy of the soul, is not dependent on their fancies, and will survive forever, with its imperishable features.

—*Vauvenargues*

Ocular Tendon Transplantation: Indications, Variations and Technic

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BY operating on the extraocular muscles it is possible to create either of two effects; that is, to weaken or strengthen the mechanical purchase exerted by the muscles upon the globe. Weakening (or lengthening) procedures are: (1) tenotomy, (2) myotomy, (3) myectomy and (4) recession. Strengthening (or shortening) procedures are: (1) advancement, (2) tuck, (3) resection, (4) cinch and (5) transplantation.

Attention is herewith directed to the transplantation of ocular muscles. It is a method not commonly used and is regarded unfavorably by many surgeons. The fact that its use has proved disappointing in some cases is probably due to the fact that the procedure has definite limitations; when these are exceeded, poor results are inevitable. More important, perhaps, are the indications for its use, which must be observed rigidly.

Strictly speaking, surgical transplantation is not a strengthening procedure, but rather a substitution for the function of a paretic muscle accomplished by altering the direction of action of one or more other muscles. More specifically, the insertion, and also the point of contact, of a nonparalyzed muscle may be used so that the resulting effect will compensate for the action of the paralyzed muscle.

Transplantation has taken many forms and has been applied to all manner of oculomotor disturbances. It has many advocates, but there are those who hold it in disdain. The fact that the method has been tried mostly in problem cases, probably in desperation, has contributed to this disparagement. The term is usually applied to various forms of substitution in the surgical treatment of paralysis of the lateral rectus muscle.

Operation for Paralysis of the Lateral Rectus Muscle.—Acquired abducens paralysis is characterized by convergent deviation, limitation of abduction and homonymous diplopia, which eventually may give way to suppression. In cases of long-standing paralysis, contraction of the antagonistic medial rectus muscle may develop, as well as a tendency to turn the head toward the affected side. Spontaneous recovery will occur in some cases, and therefore, before surgical intervention is considered, a reasonable period—six to twelve months—should be permitted for observation, especially if the origin of the paralysis is traumatic. When no improvement occurs during this interval, operation is indicated.

The object of surgical intervention, of course, is to establish parallelism of the visual axes in the primary position. If this result can be obtained and normal retinal correspondence is present, binocular single vision in this position is to be expected. When long-standing suppression has been established and then suddenly abolished by operation, however, diplopia of a most annoying type may result. Also, when contraction of the

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medial rectus muscle has become marked, cosmetic improvement is perhaps all that can be desired, and this is better if somewhat undercorrected than if overcorrected.

In proceeding with the operation, most authors agree that recession of the opposing medial rectus should be the first step, followed by resection of the paralytic lateral rectus. Some reverse these steps, and, if insufficient correction is obtained, many also advocate the same operation on the horizontal muscles of the other eye. Repeated resections and recessions can be performed, but obviously a point of diminishing returns may soon be reached. If these operations fail to produce any abduction in the paralytic eye, tendon transplantation is to be recommended.

Although reports are available of the use of tendon transplants in the treatment of concomitant strabismus, as well as for paralysis of each of the ocular muscles, experience has shown that there are some conditions under which the operation is ill advised, and others in which there are definite contraindications to its use. With reference to the lateral rectus, the method is not applicable in "early cases" of congenital palsy of the sixth nerve. Lyle and Cross[1] stated, however, that it can be used when a large deviation in the primary position is present, together with compensatory headposture. I have used it in 1 such case, with a good result. Obviously, Duane's retraction syndrome is a contraindication for any form of surgical tendon transplant, since a peculiar fibrotic condition exists in the lateral rectus and to some extent in the medial rectus muscles. Spaeth[2] has insisted that the operation is to be performed only in those cases in which the eye can be moved to the midline spontaneously, or at least after recession of the medial rectus. This is contrary to my own experience, as will be shown.

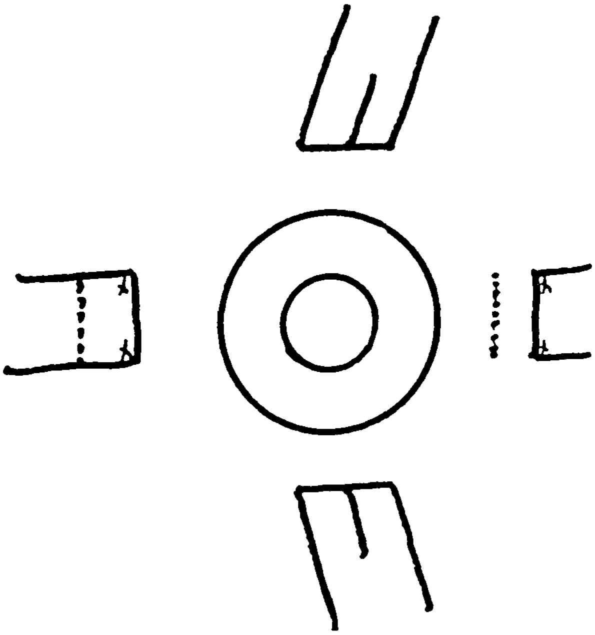

Fig. 1.—Left eye. After Hummelsheim, first stage: recession of medial rectus; resection and advancement of lateral rectus; splitting of tendons of superior and inferior recti.

In the operation originally described by Hummelsheim[3] the superior and the inferior rectus muscles are split about 12 mm. back from their points of insertion, and the temporal half of each tendon is detached (Fig. 1). Each temporal slip of tendon is then sutured to or near the point of insertion of the paralytic lateral rectus (Fig. 2). Recession of the medial and resection of the lateral rectus muscles were incorporated into the operation as a later development. Many modifications have been reported; among the most noteworthy is that of O'Connor,[4] who transplanted the nasal halves laterally instead of the temporal halves of the vertical recti. Berens and Girard[5] augmented this by transplanting the nasal tendon halves to the temporal portions of the original insertions (Fig. 3).

A case is reported in which bilateral abducens paralysis of traumatic origin was present, with bilateral contraction of the medial rectus muscles. It is postulated that injury was sustained in the region where the abducens nerves pass over the petrous portion of the temporal bone. Tendon transplantations were performed on each eye, resulting in a good cosmetic appearance with binocular single vision in the primary position and some ability to abduct the eyes.

REPORT OF CASE

Mrs. M. S., age 50, was first seen on Nov. 13, 1954. The patient was a victim of an automobile accident that had occurred on June 6. She had suffered a cerebral concussion with no fracture of the skull and had been unconscious for five days. On regaining consciousness she had diplopia, which had persisted; she was constantly dizzy, and was unable to walk in a straight line.

Examination revealed the uncorrected vision to be 6/5 in the right eye and 6/6 in the left. Both eyes were adducted, owing to paralysis of the lateral recti and contracture of the medial recti. The patient was unable to abduct either eye to the midline. Measurement of the tropia with loose prisms revealed the right eye to be adducted 60 prism diopters and the left 45 prism diopters. When fixing with the left eye the patient turned her face to the left, and when fixing with the right eye she faced to the right. Homonymous diplopia was constant and relieved only by occlusion of one eye. There was fair ability to elevate or depress the eyes, but this could not be measured, because of the marked adduction. Otherwise, the external appearance of each eye and both fundi was normal. The patient used alternate daily occlusion.

On Oct. 18, 1955, eleven months after the accident, the medial rectus of each eye was recessed to the equator, with no apparent improvement. This was followed on November 19 with a 10 mm. resection of the right lateral rectus and an 8 mm. resection of the left lateral rectus. Both muscles showed pronounced aplasia. Horizontal movement was improved, in that the patient could rotate the right eye outward to about 15 degrees, and the left eye outward to about 10 degrees, from the midline. Diplopia was relieved for the near point with a 9-diopter prism base out before each eye, but was constantly present beyond a distance of 10 feet.

On December 8 a transplantation was performed on the right eye and on December 15 on the left eye. In each instance the lateral two-thirds of the superior and inferior recti were transplanted to points on the sclera respectively just above and just below the point of insertion of the lateral rectus. At the same time the medial third of the superior and inferior recti were transplanted to points just lateral to the temporal edge of the respective muscle insertions. After this operation the patient experienced single binocular vision with a 1-diopter prism base down before the right eye, a 1-diopter prism base up before the left eye and, for distance, a 10-diopter prism, base out, before each eye.

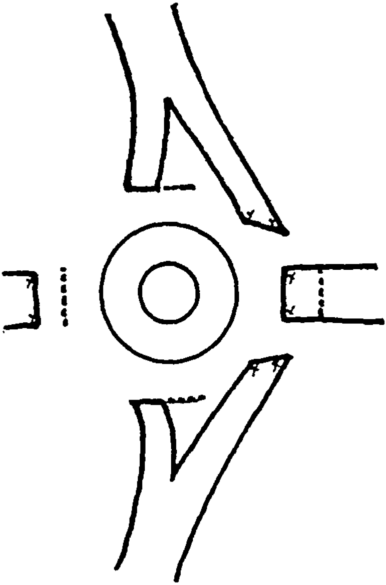

Fig. 2.—Left eye. After Hummelsheim, second stage: transplantation of lateral tendon slips of superior and inferior recti.

On Jan. 31, 1956, a marginal myectomy of the right medial rectus muscle was performed on both the upper and the lower borders. This was followed on February 7 by the same procedure on the right medial rectus

On April 16 all postoperative reacti[illegible] subsided, and the patient was quite [illegible] able. Each eye could [illegible] is, abducted 10 [illegible] midline. The [illegible] correct[illegible]

1-diopter prism base up; left eye, 0.25 S. + 0.25 C. axis 180° with 1-diopter prism base down. The same correction with + 2.00 S. added before each eye was used for near vision. The patient demonstrated single binocular vision, near and distance, over a fairly large central field. The fusional amplitudes were as follows: At 6 M., from 2-diopter base out to 15-diopter base out; near, from 5-diopter base out to 22-diopter base out. Fusion and stereopsis were good.

Technic of Transplantation: When applied to paralysis of the lateral rectus muscle, the technic that I have followed is a modification of that described by Berens and Girard[5] as in the case just presented (Fig. 4).

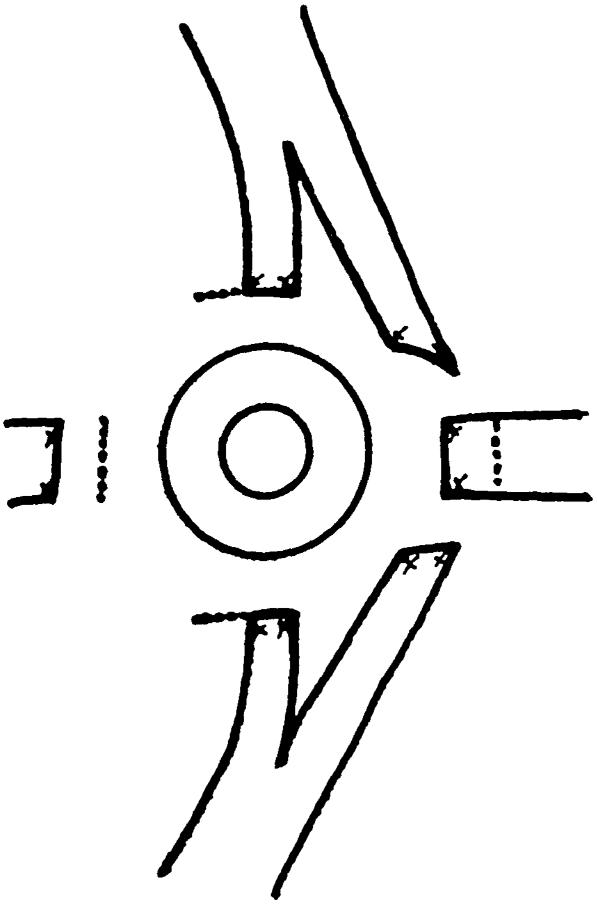

Fig. 3.—Left eye. After Berens and Girard: transplantation of superior and inferior recti; the lateral tendon slips being attached above and below the lateral rectus, and the medial tendon slips being attached to the lateral portions of the original insertions.

The contracting, antagonistic medial rectus is recessed, usually to the equator, as in this case. This is followed by resection of the paralytic lateral rectus, the amount depending on the residual deviation, but seldom more than 10 mm. I prefer to do these operations at separate sittings, in order to determine the amount of correction obtained by each. If the paralysis is unilateral and remains uncorrected by these procedures, a similar surgical procedure is done on the medial and the lateral rectus of the unparalyzed eye. If the condition under treatment is bilateral paralysis of the sixth nerve, recessions of both medial recti are performed at one sitting, followed by resections of both lateral recti at the second sitting, as in the case presented.

In the event of failure to gain sufficient correction with the aforementioned procedures, transplantation is undertaken. It has been my practice to transplant somewhat more than the temporal half, usually two thirds, of the superior rectus outward toward the point of insertion of the lateral rectus. This is performed by detaching the muscle at the point of insertion in the usual fashion, holding it in a muscle clamp and splitting the tendon backward with a sharp muscle hook. A double-armed No. 5-0 plain gut suture is introduced through the free end of each divided portion. The suture through the temporal portion of the tendon is then inserted into the sclera just above the superior edge of the insertion of the lateral rectus muscle, attaching the temporal half of the superior rectus in this location. The nasal portion of the detached tendon is then sutured to the temporal half of its original insertion, as suggested by Berens and Girard[5] (Fig 3). If the eye cannot be abducted to the midline preoperatively, it has been my practice to attach the nasal portion of the superior rectus muscle just lateral to the temporal edge of its original insertion (Fig. 4) as was done in this case. It is important when one reattaches the split portions of the tendon to have these flattened out so as to provide as wide an attachment as possible, with minimal reaction, and this may be accomplished better by the use of two separate sutures (Figs. 2, 3 and 4). Most writers state that the temporal portion of the superior rectus is transplanted to or beneath the point of insertion of the lateral rectus; but in my experience, in order to reach this point the muscle has to be put on a tremendous stretch, and for this reason I have been in the habit of attaching it just above the insertion of the lateral rectus.

The same procedure is performed on the inferior rectus muscle. Baldwin[7] has suggested attaching the inferior tendon transplant slightly closer to the lateral rectus insertion than the superior tendon is inserted, in order to improve downward gaze, and I have found this helpful.

It is important not to split the tendon more than 10 mm. back from its detached end. The effective point of the new insertion, as was pointed out by Franscois,[6] is at the point of division of the two portions of the tendon; hence, the shorter the split, the more lateral and the more anterior is this new and effective insertion.

Final adjustment, if satisfactory abduction is not obtained, is effected by further recession or by marginal myotomy of the medial rectus. McLean[8] suggested detaching the medial rectus, identifying it with loose sutures and reattaching it as necessary several days after the transplantation operation.

Complications.—The complications of transplantation are few. Most notable is a rather prolonged postoperative reaction. Occasionally slight enophthalmos has been noted, with accompanying narrowing of the palpebral fissure, but this usually does not last for more than a few days after the operation. Temporary changes in the corneal astigmatism and folds in Descemet's membrane, apparently due to pressure of the muscles on the globe, have been reported also. Not infrequently a vertical muscle imbalance of small degree is produced; it can usually be overcome by means of vertical prisms incorporated in spectacle frames, as was necessary in the *case presented.*

COMMENT

The mechanism by which the operation accomplishes its purpose has been the subject of much debate. Spaeth[2] expressed the opinion that recession of the medial

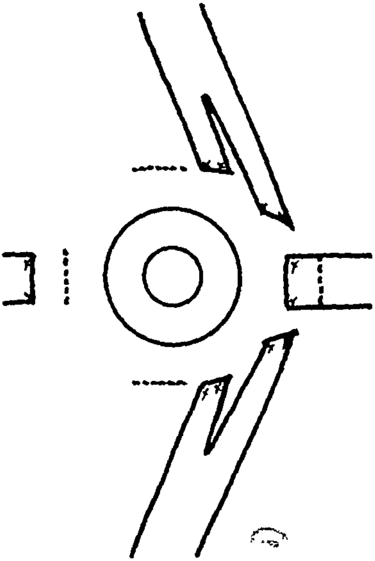

Fig. 4.—Left eye. Author's m[illegible] s-
plantation of [illegible] and inf[illegible]
medial an[illegible] s
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and resection of the lateral recti probably bring the eyes to the midline. Transplantation, in his opinion, reduces the adducting power of the vertical recti and produces a fibrous cicatrix on the temporal side of the globe which augments the resected and paralytic lateral rectus. In his opinion, any abducting ability obtained is due wholly to the secondary and simultaneous horizontal action of the oblique muscles. A much larger group of surgeons, and probably with good reason, is convinced that the transplantation procedure does augment directly the patient's abducting power. Although the superior and inferior rectus remain primarily an elevator and a depressor respectively, their secondary actions of adduction are nullified, of course. Hildreth,[9] and many others have pointed out that the new and effective points of contact of the vertical recti have been set laterally, thus changing the direction of pull of these muscles with relation to the vertical axis of the globe. If the lateral displacement of the tendons is sufficient, the secondary action of these muscles will produce abduction.

Finally, it must be remembered that many combinations of surgical procedures may be required for the treatment of abducens paralysis. The results obtained from identical methods are not always uniform. For these reasons the handling of each patient must be planned individually, and in many cases some form of tendon transplantation can be used to great advantage.

SUMMARY

The place of tendon transplantation operations in the surgical treatment of strabismus is discussed, with particular reference to modifications of the Hummelsheim operation.

A case is reported of bilateral abducens paralysis treated by bilateral transplantation operations, resulting in binocular single vision and abduction.

The author's surgical technic is described, and indications and contraindications for its use are pointed out.

The mechanism is reviewed by which the operation accomplishes its purpose.

RIASSUNTO

Viene discussa l'importanza degli interventi di trapianto tendineo nella cura dello strabismo, e in modo speciale le modificazioni della tecnica di Hummelsheim.

Viene riferito un caso di paralisi bilaterale dell'abducente, trattato con trapianto bilaterale, che ottenne il ripristino dell'abduzione con visione binoculare perfetta.

Viene, infine, descritta la tecnica chirurgica personale con le sue indicazioni, controindicazioni e meccanismo attraverso cui raggiunge i suoi scopi.

RÉSUMÉ

Le lieu de la transplantation tendineuse dans le traitement chirurgical du strabisme est discuté, avec référence spéciale quant aux modifications de la technique de Hummelsheim.

Un cas de paralysie de l'abducteur traité par transplantation bilatérale est rapporté.

La technique de l'auteur est décrite, avec ses indications et contre-indications.

Le mécanisme par lequel cette opération remplit sont but est exposé.

SUMARIO

Discute o papel do transplante de tendáo no tratamento do estrabismo fasendo referência especial as modificações da operação de Hummelsheim. Relata um caso de paralisia bilateral do abductor tratado por operações de transplantes resultando em visão bonocular simples e abducção.

A técnica cirúrgica é descrita assim

como as indicações e contra-indicações. Analiza o mecanismo que explica os efeitos do tratamento cirúrgico.

ZUSAMMENFASSUNG

Es wird unter besonderer Berücksichtigung der Modifizierungen der Hummelsheimschen Operation die Stellung der Sehnentransplantation in der chirurgischen Behandlung des Schielens erörtert.

Ein Fall von doppelseitiger Abduzenslähmung, bei dem eine doppelseitige Transplantation mit dem Resultat normalen Sehens und Abduzierens beider Augen vorgenommen wurde, wird beschrieben.

Die chirurgische Technik das Verfassers wird wiedergegeben, und die Indikationen und Gegenindikationen ihrer Anwendung werden hervorgehoben.

Der für den Erfolg der Operation verantwortliche Mechanismus wird erörtert.

RESUMEN

Se discuten el lugar de las operaciones de transplante de tendones en el tratamiento quirúrgico del estrabismo, con especial mención de las modificaciones de la operación de Hummelsheim.

Se reporta un caso de parálisis bilateral del motor ocular externo tratado por operacioves de transplante bilateral, habiéndose logrado visión binocular y movimiento de abducción.

Se describe la técnica quirúrgica del autor y se senalan sus indicaciones y contraindicaciones.

Se estudia el mecanismo por el cual actúa la operación.

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Early diagnosis, once more, is the reward of a suspicious mind. Does a man who has eaten like a horse till the age of forty suddenly get indigestion, though his job, his habits, his wife remain the same? No! Does gastric ulcer start after forty? Never—well, hardly ever! Does the tired business man come back tired after a week at Westward Ho? Not if his tiredness is no more than business worries. These people want investigation before, not after, they start a course [illegible] diet and medication on the advice of the chemist, the man in the train, or the [illegible] e health column in the evening paper. The seller of alkalis is the und [illegible] friend.

Tendon Transfer (or Transplant) for Paralysis of an Interosseous Muscle

TIMOTHY A. LAMPHIER, M.D., F.A.C.S., F.I.C.S., D.A.B.
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THIS paper is written primarily to describe a technic for transplantation of an extensor tendon to correct paralysis of the intrinsic musculature of the hand resulting from injury to the distal motor branches of the ulnar nerve.

Certainly, paralysis of any muscle involving an important function of the major hand is crippling and disastrous to a person carrying out fine technical work that requires great manual dexterity. Indeed, such paralysis can result in great economic loss even when it affects the minor hand. The possibility of further serious injury must be given serious consideration when an important function, such as adduction of a digit, is lost, especially if, as in the case to be reported here, that digit is the little finger. Fortunately, loss of sensation is not the problem, as an anesthetic finger prohibits detailed secondary digital repair.

As will be described in the report of the case to be presented, such paralysis involves loss of that important function of any hand, opposition of the distal tip of the thumb to the tip of the little finger. The patient also loses the ability to make a complete fist or a tight fist, as in grasping. Picking up small objects is made awkward. A further complaint, and probably the primary one from the patient's point of view, is that the little finger "catches on to objects or clothing" when the hand is extended, as in reaching for objects.

Of course, the ability to do fine detailed work requiring coordinated movements of all digits working in unison is lost. Objects cannot be held between the little finger and the ring finger; the patient will complain of awkwardness. The female patient will be further disturbed by the deformity from the aesthetic standpoint.

REPORT OF CASE

D. M., a white woman aged 20, was first seen in November, 1955. She complained of inability to adduct the little finger of the right hand. She stated that in June 1955, while she was working in a factory that made paper boxes, her right hand (major hand) was injured "through and through" when a cylinder penetrated it. Immediately after the injury there was pain in the palm and in the little finger of the right hand. At the time of examination she described the right hand as "awkward," because of its inability to make a tight fist.

Physical examination revealed that the little finger of the right hand could not be adducted to the ring finger. This deformity was most pronounced with all of the fingers fully extended. The thumb could not be opposed to the distal end of the little finger, and the patient was unable to make a tight fist.

Operation was performed on December 1. With adequate pentothal anesthesia and with the patient in the dorsal-recumbent position, the right hand was prepared with ether and zephiran and properly draped, after a

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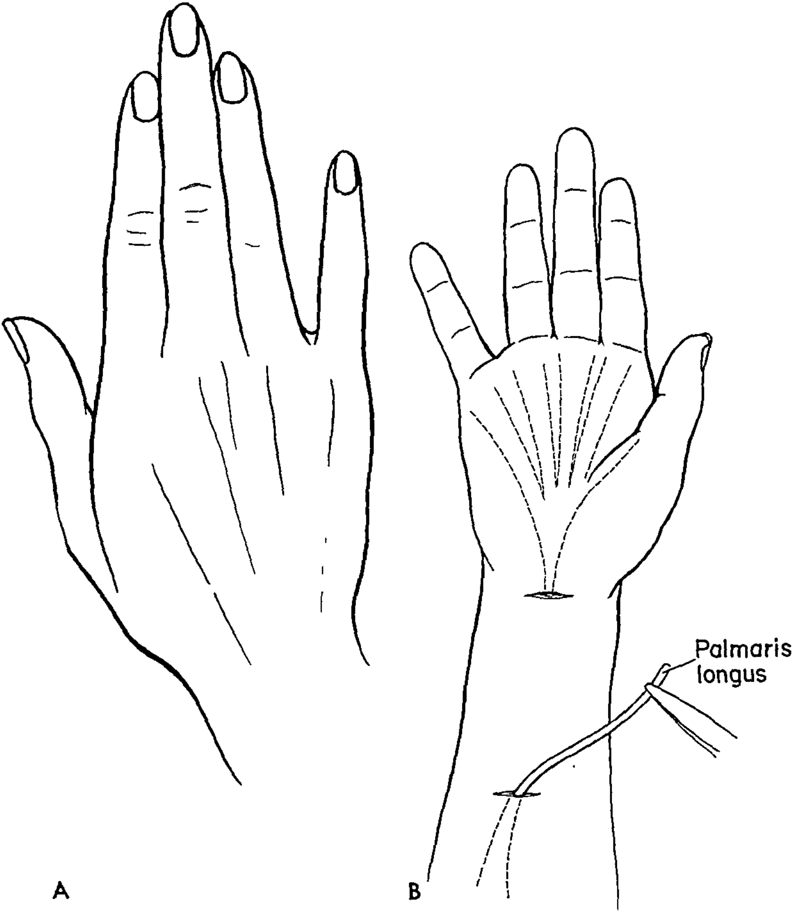

Fig. 1.—*A*, loss of ability to adduct the small finger or the ring finger; accentuated with digits held in extension. *B*, division and preparation of the palmaris longus tendon for a "free tendon graft."

tourniquet had been placed above the upper portion of the right arm. A small C-shaped incision was made over the right palm in the region of the distal palmar crease. Below the skin, scar tissue, the

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was completely surrounded by scar tissue. A type of neurolysis was then carried out and the nerve freed up through the entire area. The edges of the skin were brought together with interrupted black silk sutures. A small (1 inch, or 2.5 cm.) transverse incision was made over the volar aspect of the right wrist, and through this incision the palmaris longus tendon was divided. It was freed upward at a high level, after which the entire tendon was removed to be used for a free tendon graft. The incisions were closed with interrupted black silk sutures. At this point over the dorsum of the right hand, in the region of the metacarpophalangeal joint, a small incision was made and a smaller extensor tendon to the index finger was divided at this level. At a point just distal to the transverse carpal ligament over the dorsum of the hand, another small incision was made, and through this incision the extensor tendon, previously divided, was brought through. With use of the palmaris longus tendon graft, the extensor tendon to the index finger that had been previously divided was then anastomosed to the free tendon graft; the entire tendon was then transplanted subcutaneously in an oblique fashion to the base of the dorsum of the right little finger. Prior to this tendon transfer a small pulley was made and fixed to the periosteum of the first metacarpal bone. A dry sterile dressing and plaster cast were applied with the finger in full extension.

After the operation, the patient did well,

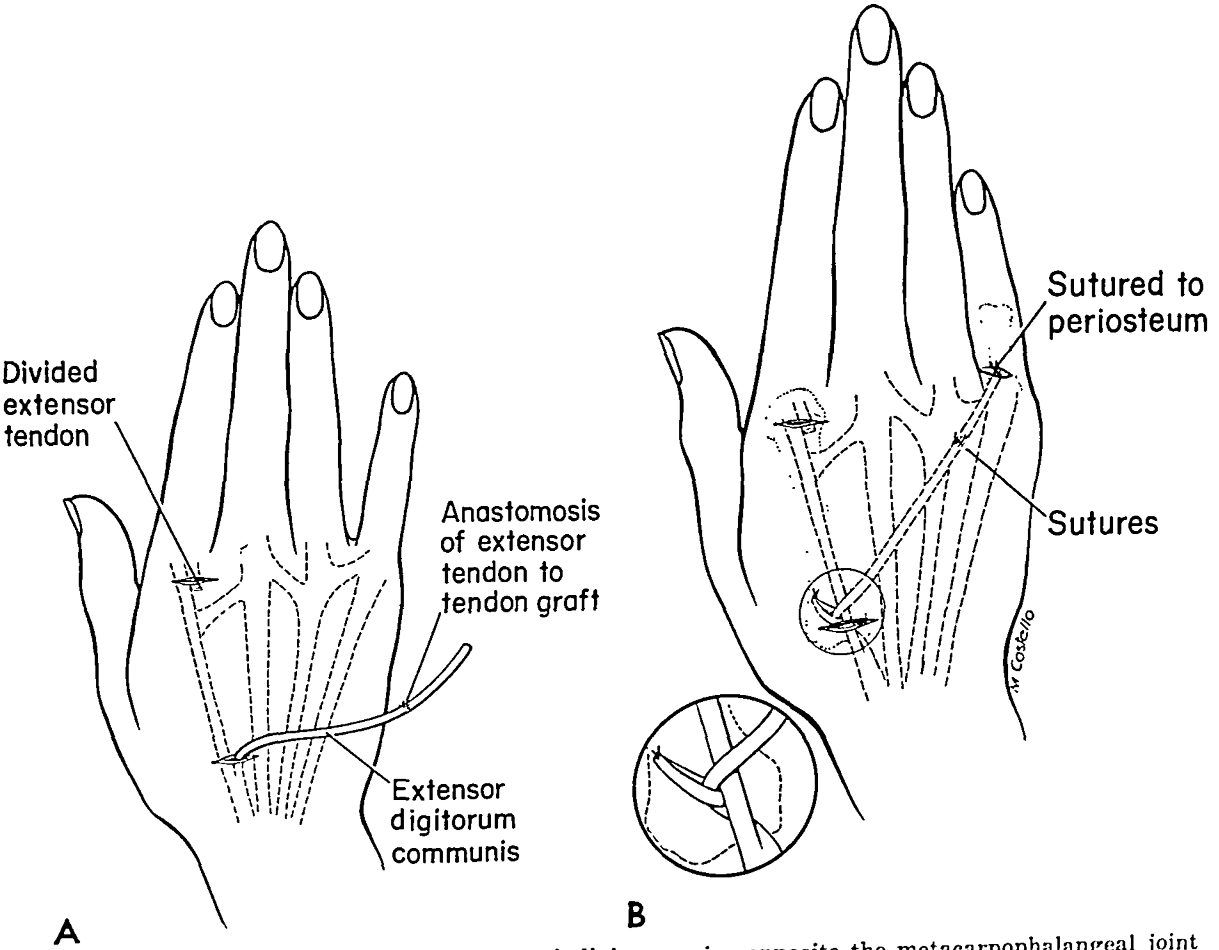

Fig. 2.—*A*, details of division of the extensor indicis proprius opposite the metacarpophalangeal joint the anastomosis of tendon graft to proximal segment. *B*, sketch showing actual preparation of pulley for transferred tendon and position of this tendon around remaining intact *communis* tendon. The transferred tendon is tunneled subcutaneously with a straight small mosquito snap or clamp and fixed to periosteum of proximal phalanx of little finger.

and the skin sutures and plaster cast were removed on the twenty-first postoperative day. After extensive physiotherapy consisting of whirlpool and rubber ball exercises, the patient regained 80 per cent of total functional adduction of the right little finger, and the deformity was minimal.

SUMMARY

A case is reported, and the surgical technic employed for a tendon transplant (to correct loss of adduction of a digit because of irreparable destruction of a motor nerve to the intrinsic muscle of the hand) is described. The end result so compensated for the original deformity as to furnish abundant justification for surgical intervention.

RÉSUMÉ

L'auteur décrit la technique chirurgicale utilisée dans un cas de transplantation tendineuse (correction de la perte de l'adduction par destruction d'un nerf moteur du muscle intrinsèque de la main). Le résultat obtenu a pleinement justifié l'intervention chirurgicale.

ZUSAMMENFASSUNG

An Hand eines Krankheitsfalles wird die hier angewandte chirurgische Technik einer Sehnentransplantation beschrieben, die vorgenommen wurde, um den durch irreparable Zerstörung eines motorischen Nervens der inneren Handmuskeln bedingten Adduktionsverlust eines Fingers auszugleichen. Der chirurgische Eingriff wurde durch die erfolgreiche Kompensierung der Entstellung in hohem Masse gerechtfertigt.

RIASSUNTO

Viene descritto un caso in cui si esequì un trapianto tendineo per correggere la perdita di adduzione di un dito causata dalla distruzione del nervo motore Il risultato definitivo fu così soddisfacente da giustificare l'intervento.

RESUMEN

Se reporta un caso y se describe la técnica quirúrgica empleada para transplantar un tendón para corregir la péridida de la adducción de un dedo debida a destrucción irreparable de un nervio motor de los músculos intrínsecos de la mano. El resultado final justifica la intervención quirúrgica.

SUMARIO

Apresenta um caso de transplante de tendão, descerevendo a técnica para corrigir a perda de adducção do dedo por destruição irreparavel do nervo motor da musculatura intrínseca da mão. O bom resultado final compensa e justifica abundantemente a intervenção cirúrgica.

> 'Why are you in such an everlasting hurry?' people are always saying to me . . . You eat, drink, walk and even sleep as if you were in a rush to get somewhere for fear of dying before you reach it! They do not understand that I run not to but away.
>
> —*Anonymous*

Otorhinolaryngologic Surgery

The Surgical Treatment of Deafness

ALFRED T. LIEBERMAN, M.D.

BALTIMORE, MARYLAND

IT is a fascinating yet humbling experience to trace the historical background of the treatment of otic disease from ancient times to the present. The keen observations of great minds, recorded through the centuries, serve as a constant challenge to modern surgeons, who live in an age of electronics and atomic energy. According to the *History of Otolaryngology* by Stevenson and Guthrie,[1] the earliest medical writing is to be found in Egyptian papyri, the most famous of which is the Papyrus Ebers, written about 1550 B.C. It consists for the most part of lists of empiric remedies along with spells and incantations and contains a number of prescriptions and remedies for deafness and for aural discharge.

Available records of ancient Hebrew otolaryngology supply little information with regard to the ear and its diseases. The Bible contains much information on personal and social hygiene but relatively little on medicine and surgery. In commentaries on the Babylonian Talmud, however, written in the fourth and fifth centuries A. D., there appears considerable knowledge of anatomy and surgery, including ear, nose and throat. Reference is made to one of the oldest folkremedies for deafness—one still in use in primitive communities today—the introduction of a little of the patient's urine into the ear.

In records of the ancient Hindu and Chinese civilizations much medical information is recorded, including descriptions of diseases of the ear, nose and throat.

With the rise of Greek and Roman civilization, great figures appeared who profoundly influenced medical teachings for centuries to follow. Among the greatest was Hippocrates, who lived approximately four centuries before the Christian era. He was probably the first to inspect the tympanic membrane and to recognize it as a part of the organ of hearing.

Galen, a Greek, was born in the second century A. D. He developed a great knowledge of anatomy from dissection of animals and was one of the first experimental physiologists. In the light of present-day knowledge his understanding of the ear was indeed remarkable. His surgical advice is sometimes strangely modern, e. g., when he states that carious bone should be removed through an incision made behind the ear.

In that period of transition from medieval to modern times known as the Renaissance, the spread and development of knowledge of all kinds progressed so rapidly that history is studded with glittering names.

In the sixteenth century Vesalius published his great work on human anatomy. He was the first to give an accurate description of the malleus and incus. In the same century lived Eustachius and Fallopius, to whom otologists are indebted for advances in the knowledge of otic anatomy.

From the Department of Otolaryngology, Johns Hopkins Hospital, Baltimore.

In the seventeenth and eighteenth centuries, Willis of England, Duverney of France and Valsalva of Italy are but a few to whom we owe so much. It was during this period that some of the earliest surgical procedures for relief of deafness were described. Paracentesis of the tympanic membrane was employed for the relief of deafness long before it was advised as a means of facilitating drainage of the middle ear. Similarly, mastoidectomy was recommended as a cure for deafness and tinnitus long before it was accepted in the treatment of mastoiditis.

The nineteenth century brought with it certain refinements in otologic knowledge. Corti emphasized histologic study and was the first to describe the cochlea in detail. It was during this period that the French, German and English schools of otolaryngology contributed so many of the great names that have become bywords. Among these must be mentioned Helmholtz, Weber, Rinne, Yearsley, Toynbee, Wilde and Politzer.

Modern Concepts of the Surgical Treatment of Deafness.—The successes attained in present-day operations for deafness are due not only to the otolaryngologic tradition of knowledge and experience but to the many advances in modern science. Refinements in audiologic testing provide greater accuracy in choosing candidates for surgical treatment; new technics in roentgenography make possible the visualization of anatomic regions and pathologic entities heretofore not recognized; the use of the magnifying loupe and the operating microscope enables the surgeon to devise technical procedures never before possible; modern chemotherapeutic agents and antibiotics help immensely in the successful completion of operations that were formerly defeated by secondary infection.

Deafness in general can be divided into four main categories: nerve deafness; conduction deafness and a combination of the two, known as mixed deafness and central deafness. Nerve deafness involves the neural elements of hearing and may occur in the end organ of hearing, in the nerve pathways to the brain or in centers in the brain itself. The deafness that occasionally follows mumps or meningitis is an example of the pure nerve type of deafness. By contrast, the hearing loss of patients with otosclerosis is a result of impairment of the sound-conducting mechanism alone and is therefore classified as conduction deafness. It is not uncommon for nerve deafness to coexist in a patient with conduction deafness (the so-called mixed deafness). This is illustrated by the patient with conduction deafness due to chronic disease of the middle ear in whom further hearing loss results from damage to the auditory nerves associated with aging. Central deafness occurs as a result of injury, disease or maldevelopment in the auditory centers of the brain itself. The clinical result is inability to perceive and recognize sound in a normal manner despite the fact that audiometric responses are apparently normal.

Accurate diagnosis of the type of deafness present is extremely important, since surgical treatment is employed only for those patients in whom disturbance of the sound-conducting mechanism is the sole or major cause of the hearing loss. At the time of writing, no known surgical procedure can restore or improve hearing in a patient with nerve deafness or central deafness. For such a patient a properly fitted hearing aid of the right type, instruction in lip reading and auditory training can do much to ameliorate the affliction.

Among the disease [illegible] ducing conduction deafness [illegible] treatment are (1 [illegible] tissue [illegible] (2) [illegible]

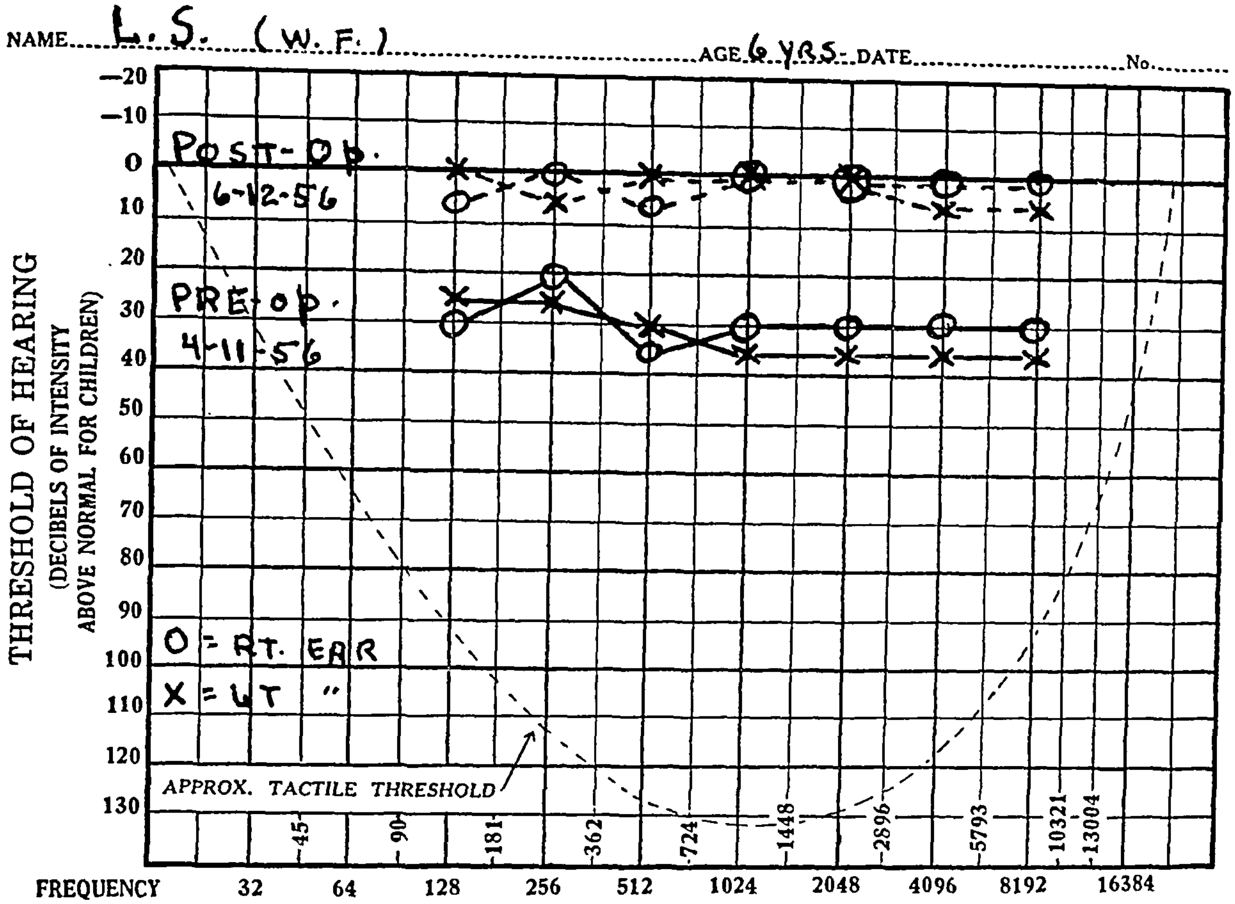

Fig. 1.—Audiogram showing improvement in hearing obtained after adenotonsillectomy.

toid process; (3) congenital or acquired atresia of the external auditory canal, and (4) otosclerosis with stapedial ankylosis.

1. *Surgical Treatment of Deafness Caused by Hypertrophied Lymphoid Tissue of the Oropharynx and Nasopharynx.*—The role of hypertrophied lymphoid tissue of the oropharynx and nasopharynx in the production of deafness has long been known. In 1842 James Yearsley of London wrote that he "suspected an overlapping of the mouths of the eustachian tube by loose mucous membrane" and noted that "shortly after excision of a small slip of mucous membrane from underneath the arches of the palate, amendment more or less considerable (in hearing) has taken place." In the absence of any infection, the presence of obstructing masses of lymphoid tissue in the nasopharynx and oropharynx, interferes with normal function of the eustachian tube and ventilation of the middle ear and is capable of producing mild to severe hearing impairment of the conductive type. Yearsley's experience has been repeated countless thousands of times, and the relatively simple operation of adequate and thorough removal of lymphoid tissue from the nasopharynx remains one of the most satisfying and effective means of relieving deafness (Fig. 1).

2. *Surgical Treatment of Deafness Caused by Infection in the Middle Ear and Mastoid Process.*—Infection in the middle ear and mastoid process can result in a variety of pathologic changes capable of producing hearing loss of varying degrees. The loss of hearing is due to involvement

of the anatomic structures in the middle ear spaces that conduct sound to the inner ear. The clinical manifestations include: (a) destruction of portions or all of the tympanic membrane; (b) necrosis of portions or all of the auditory ossicles; (c) formation of aural polyps and granulation tissue in the middle ear spaces; (d) cholesteatomatous invasion of the epitympanic space and mastoid process, and (e) formation of scar tissue involving the oval and round window areas.

The primary aim of the surgeon is to eradicate the underlying infection; his secondary aim, to utilize reparative technics to improve the hearing. The basic surgical procedures employed in removing infection are (1) modified radical mastoidectomy and (2) radical mastoidectomy. In modified radical mastoidectomy an attempt is made to eliminate infection and at the same time preserve, in whole or in part, the integrity of the ossicular chain. Radical mastoidectomy includes no effort to preserve the ossicles and is designed to convert the middle ear and mastoid cavity into one epithelium-lined cavity.

The reparative technics utilized to improve hearing in patients with chronic disease of the middle ear and mastoid are designed to compensate for disturbance of the normal conducting mechanism of the middle ear by the disease. At present there is no satisfactory substitute for ossicles that have been destroyed by disease or removed by operation. The gap in the

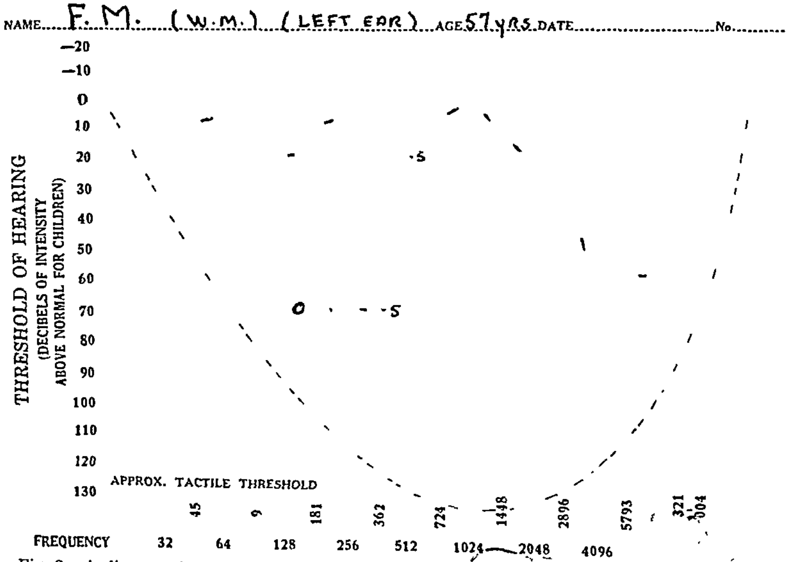

Fig. 2.—Audiogram showing improvement in hearing obtai
of left auditory canal. Hearing in right ear had previousl
successful attempt at surgical correction of the sim

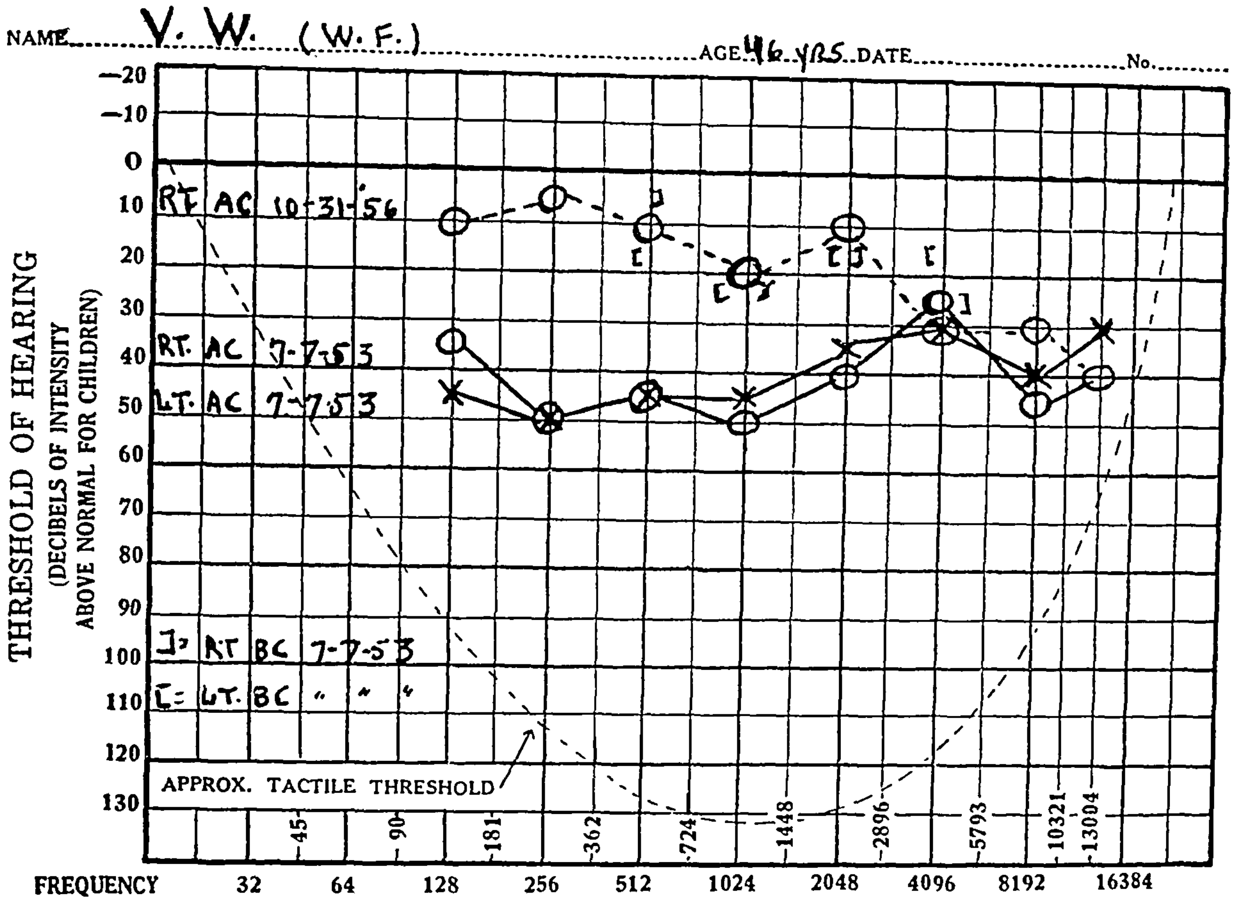

Fig. 3.—Audiogram showing improvement in hearing after fenestration of right ear.

sound-conducting apparatus produced either by loss of ossicles or by destruction of the tympanic membrane is compensated for by employment of skin grafts. These may be either autogenous grafts properly placed in the middle ear and mastoid spaces or pedicle grafts from the auditory canal and the tympanic membrane, so-called tympanomeatal flaps. By the technic of myringostapediopexy described by Juers[2] in 1954, one strives to maintain continuity in the sound-conducting apparatus by placing the tympanomeatal flap in contact with the stapes. In 1956 Wullstein,[3] of Wurzburg, Germany, in an effort to repair the damage done by chronic otitis media, described an elaborate and highly technical procedure known as tympanoplasty. In this operation, performed largely with the aid of operating microscope, great stress is laid on the acoustic functional ability of the round and oval windows, and free skin grafts are employed to maintain normal function of the spaces and structures of the middle ear.

3. *Surgical Treatment of Deafness Caused by Congenital or Acquired Atresia of the Auditory Canal.*—Failure of normal embryonic development of the ear results in varying defects of the external ear, the auditory canal, the middle ear structures and occasionally of the inner ear. The combination of malformations of the external ear and the auditory canal occurs not infrequently and may be associated with a conductive type of hearing loss ranging from 50 to 60 decibels. The condition may be unilateral, but it occurs bilaterally in a high percentage of cases. If malformation of the inner ear or eustach-

ian tube is present, however, surgical treatment of the associated atresia of the auditory canal does not improve the hearing.

Surgical correction of atresia of the auditory canal is designed to create a new auditory canal, but, because of the coexistent deformities in the middle ear, the hearing improvement brought about by this procedure alone often fails to bring the hearing up to a serviceable level.

With the addition of fenestration, performed at the same time the new auditory canal is created or later (two-stage technic), hearing levels well within serviceable range can frequently be obtained.

Because of the hazard of injury to the facial nerve in this type of operation, it is advisable that the operation be performed only when the congenital defect is bilateral.

Noncongenital bony atresia of the auditory canal is relatively infrequent. In some instances the cause is unknown; in others the condition is an aftermath of trauma. When it occurs bilaterally, the impairment in hearing may be severe. Removal of the obstructing bony growth permits the return of normal hearing (Fig. 2).

4. Surgical Treatment of Deafness Caused by Otosclerosis.—The present-day treatment of deafness caused by otosclerosis forms one of the brightest chapters in the entire history of otolaryngology. Although this curious and baffling disease has long been known to otolaryngologists, it is only within the past twenty-five years that operation for deafness has been successful. The following passage is translated from the writings of Valsalva, re-

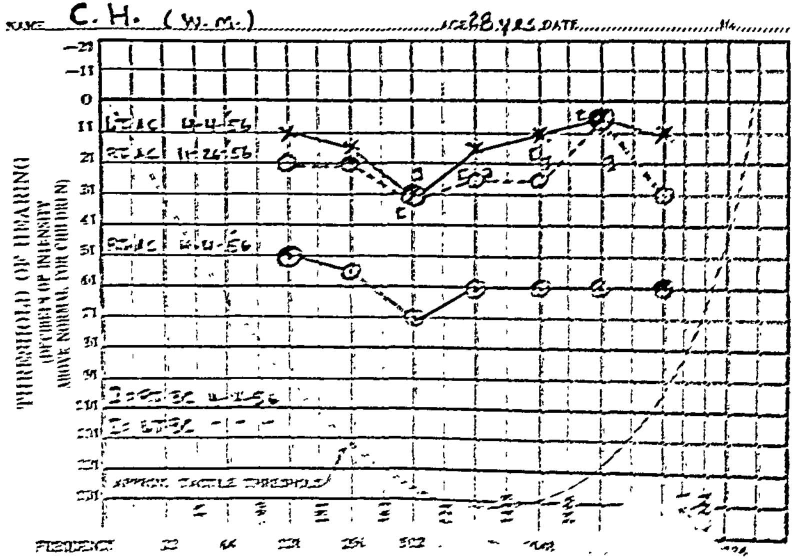

Fig. 2.—Audiogram showing improvement in [illegible]

corded over two hundred and fifty years ago: "One day in the cadaver of a deaf person I found the cause of deafness. The membrane covering the oval window was ossified in such a way that the base of the stapes and the periphery of the window formed a solid piece and the stapes had become immobile." This is the first recorded description of ankylosis of the stapes. More than a hundred years were to pass before the histologic factors producing the ankylosis became known.

In otosclerosis, the basic lesion is the formation of new bone in the region of the footplate of the stapes. With the continued formation of new bone, mobility of the stapes becomes progressively impeded, and with it the hearing deteriorates. Many theories have been advanced to explain the formation of the otosclerotic process, but the exact cause remains unknown.

Among the pioneers in the surgical treatment of otosclerosis must be mentioned Barany of Germany, Jenkins of England and Holmgren of Sweden. Sourdille of France, in 1929, performed the first successful fenestration for the relief of deafness in an otosclerotic patient, but his operation was complicated and was performed in stages. It was not until 1938, when Lempert,[4] in the United States, simplified and perfected a one-stage technic of fenestration, that surgical therapy for otosclerosis became practicable.

The essence of the fenestration procedure is the creation of a fenestra, or window, in the bony lateral semicircular canal, allowing the membranous canal and the fluid it contains to be set into motion by the impact of sound waves. By this new route the normal sound-conducting mechanism, which in the otosclerotic patient has become partially obstructed by stapedial fixation, is completely detoured.

Fenestration has gained wide acceptance by otologists throughout the world, and it has been estimated that more than 50,000 such operations have been performed. The technic used today by most surgeons who perform fenestration is based on Lempert's one-stage technic, and the overall reported statistics show a restoration to serviceable hearing levels in 75 to 80 per cent of the patients operated upon (Fig. 3).

Stapes Mobilization: The most recent surgical development for relief of deafness due to otosclerosis is the revival of stapes mobilization. As the pathologic picture of this condition became known to otologists in the last century it was a logical step that the surgical approach be directed to the ankylosed stapes itself. Kessel and Miot in Europe and Blake and Jack in America were among the pioneers in this form of surgery during the last quarter of the nineteenth century. Their early attempts included not only mobilization but actual removal of the stapes.

For reasons that are not entirely clear as presented in the literature, but presumably because of the operation's failure to bring about successful results, the procedure was abandoned. Nothing further was heard until 1952, when Rosen[5] of New York described his technic for mobilization of the stapes. Rosen's work has brought about a tremendous surge of enthusiasm and a revival of interest in surgical treatment of the stapes, and it is estimated that approximately 8,000 mobilization operations have been performed within the past three years by otologists throughout the world.

It is too early for a proper evaluation of the results. In a symposium on this subject held in 1956, statistics on 1,091 mobilization operations were analyzed.[6] Approximately 35 per cent of the patients, 1 out of 3, reached a level of 30 decibels (the level generally accepted as being necessary for serviceable hearing) or more (Fig. 4).

In the face of the appreciable difference in successful results attained by fenestration and stapes mobilization surgery, what shall be the advice given to patients seeking relief from deafness due to otosclerosis? Many factors enter into the final decision. A normal uncomplicated fenestration requires hospitalization for seven to ten days, a convalescent period of four to six weeks and prolonged after-care of the exenterated mastoid cavity. By contrast, the patient undergoing mobilization of the stapes is hospitalized for one to two days, the convalescent period is normally about one week, and relatively little postoperative care of the ear is required.

In a patient with successfully mobilized stapes, the level of improvement attainable is usually higher than that in a patient with a successfully fenestrated ear, because the ossicular chain is left intact. The possibility of a greater gain in hearing through mobilization of the stapes than is obtainable by fenestration also justifies mobilization of the stapes in patients for whom fenestration might be considered unsuitable.

For these reasons, it is the consensus of most otologists who perform fenestrations that mobilization of the stapes should be tried first; if mobilization cannot be achieved, the patient should be prepared to undergo fenestration within three to four months. In other words, mobilization of the stapes should be considered one phase of the effort to improve the hearing by surgical means.

SUMMARY

The status of present-day surgical therapy for deafness may be summarized as follows:

1. The surgical approach is applicable only to patients in whom disturbance of the sound-conducting apparatus is the sole or major cause of the hearing loss.

2. The major pathologic states producing conduction deafness amenable to surgical treatment include (a) hypertrophied lymphoid tissue of the oropharynx and nasopharynx; (b) infection in the middle ear and mastoid process; (c) congenital or acquired atresia of the external auditory canal, and (d) otosclerosis with stapedial ankylosis.

3. Surgical procedures employed to alleviate deafness include (a) removal of lymphoid tissue of the oropharynx and nasopharynx; (b) modified and radical mastoidectomy with skin grafts; (c) in patients with atresia, creation of an external auditory canal; (d) fenestration, and (e) mobilization of the stapes.

ZUSAMMENFASSUNG

Der heutige Stand der chirurgischen Behandlung der Taubheit lässt sich folgendermassen zusammenfassen:

1. Chirurgische Behandlung lässt sich nur bei solchen Kranken anwenden, bei denen Störungen des Schalleitungsapparates die einzige oder wesentliche Ursache des Hörverlustes darstellen.

2. Zu den bedeutenderen Leitungstaubheit verursachenden Krankheitsveränderungen, die chirurgischer Behandlung zugänglich sind, gehören a) Hypertrophie des lymphatischen Gewebes im Mund- und Nasenrachen, b) Infektionen des Mittelohrs und der Warzenfortsätze, c) angeborener oder erworbener Verschluss des äusseren Gehörgangs und d) Otosklerose mit Steigbügelankylose.

3. Zu den zur Behebung von Taubheit angewandten chirurgischen Verfahren gehören a) Entfernung des lymphatischen Gewebes des Mund- und Nasenrachens, b) modifizierte oder radikale Warzenfortsatzresektion mit Hautplastiken, c) Schaffung eines offenen äussere [illegible] ganges bei Kranken mit Versc [illegible] en, d) Fensterung und e) [illegible] des S [illegible]

RESUMEN

El estado actual del tratamiento quiríngico puede resumirse así:

1. El procedimiento quirúrgico aplicable solo en pacientes en los cuales un defecto del aparato de conducción es la causa única ó principal de la pérdida de la audición.

2. Los mayores estados patológicos causantes de sordera de conducción que pueden someterse a tratamiento quirúrgico incluyen: a) tejido linfoide hipertrofiado a nivel de la orofaringe y nasofaringe; b) infección en el oído suedio y apófisis mastoide; c) atresia congénita ó adquirida del conducto audiotivo externo y d) otosclerosis con anquilosis del estribo.

3. Los procedimientos quirúrgicos empleados para aliviar la sordera incluyen: a) exterpación del tejido linfoide de la orofaringe ó nasofaringe; b) mastoidectomía radical ó modificada, con injertos de piel; c) en pacientes con atresia, creación de un conducto auditivo externo; y d) fenestración y e) movilización del estribo.

RIASSUNTO

La situazione della terapia chirurgica è attualmente la seguente:

1. L'intervento è utile soltanto in quei pazienti in cui i disturbi dell'apparato di conduzione sono i soli responsabili della perdita dell'udito.

2. Le condizioni patologiche responsabili della sordità da conduzione e passibili di terapia chiurgica sono le seguenti: (a) ipertrofia del tessuto linfatico dell'orofaringe e del nasofaringe; (b) infezioni dell'orecchio medio e del processo mastoideo; (c) atresia congenita o acquista del condotto uditivo esterno; (d) otosclerosi con anchilosi della staffa.

3. I metodi chirurgici usati sono (a) l'asportazione del tessuto linfatico dall'oro e dal rinofaringe; (b) la mastoidectomia radicale o modificata con trapianto cutaneo; (c) la creazione di un canale uditivo esterno nei pazienti con atresia; (d) la fenestrazione; (e) la mobilizzazione della staffa.

RÉSUMÉ

L'état actuel de la thérapeutique chirurgicale de l'appareil auditif peut se résumer comme suit:

1. La chirurgie n'est applicable qu'à des malades chez lesquels les troubles de l'appareil de transmission sont la seule cause, ou la cause principale, de la surdité.

2. Les principaux états pathologiques provoquant la surdité de transmission et relevant du traitement chirurgical sont les suivants: a) hypertrophie du tissu lymphoïde de l'oropharynx et du nasopharynx; b) infection de l'oreille moyenne et mastoïdite; c) atrésie congénitale ou acquise du canal auditif externe; d) otosclérose avec ankylose des étriers.

3. Les techniques chirurgicales du traitement de la surdité comprennent: a) l'ablation du tissu lymphoïde de l'oropharynx et du nasopharynx; b) la mastoïdectomie modifiée ou radicale avec greffes épidermiques; c) dans les cas d'atrésie, création d'un conduit auditif externe; d) fénestration; e) mobilisation des étriers.

SUMARIO

O estado atual da cirurgia pode ser assim sintetizada:

1. O acesso cirurgico é aplicavel apenas aos pacientes em que os disturbios da condução sonora são o único ou o motivo mais grave da perda da audição.

2. A patologia mais seria, que leva a produção da surdez por condução passivel de tratamento cirúrgico inclue: a) hipertrofia do tecido linfóide do oro e nazo-faringes; b) infecção do ouvido médio e mastóide; c) atresias congênita e adquirida do canal

auditivo; d) otoesclerose com ancilose do estapédio.

3. O tratamento cirúrgico, utilizado para aliviar a surdez inclue: a) excisão do tecido linfóide; b) mastoidectomia conservadora ou radical com enxertos de pele; c) nos doentes com atresia formação de neocanal auditivo); d) fenestração; e) mobilização do estribo.

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Plastic and Reconstructive Surgery

Surgical Repair of Scarring and Ulceration of the Anterior Tibial Surface: Further Considerations

CHARLES W. TENNISON, M.D., F.A.C.S., D.A.B.

SAN ANTONIO, TEXAS

SCARRING and ulceration of the skin of the anterior tibial surface of the leg is often a cause of considerable morbidity to the patient and may result in serious damage to the underlying tissues. I published a paper on this subject[1] in 1951. I am now of the opinion that further discussion may result in some improvement in treatment.

This condition is most often the result of severe trauma in the area and usually follows compound fracture of the tibia, with or without osteomyelitis. The scar and ulceration are most frequently located in the middle and lower thirds of the anterior tibial surface and may extend for some distance posteriorly. The defect may vary from a simple scar that is easily injured to a large ulceration with extensive exposure of bone.

For the repair of this defect several methods may be used: (1) simple excision and closure; (2) excision and free skin grafting or (3) the use of pedicle flap grafts. Simple excision and closure may be possible with the minimal type of narrow defect, but this procedure has the disadvantage of leaving a scar immediately over the anterior surface of the tibia (Fig. 1).

The disadvantage of the use of a free graft in this area is well known. In many cases the blood supply is inadequate, and the skin graft will subsequently ulcerate. This conservative measure, however, should be tried in many instances, at least to produce a closed wound until definitive treatment is possible, e.g., the use of a free skin graft for closure (Fig. 1*B*).

A large percentage of scarring and ulceration of this area must be repaired by applying some type of flap graft to provide permanent cover for the tibia. This procedure will also bring a better blood supply to the already damaged bone, and may indeed be necessary to bring into control the old chronic infectious process of the latter.

When the adjacent tissues have been so scarred and damaged as to make them unavailable, or when the defect is very close to the ankle, the surgeon must go farther afield and make use of the cross leg flap from the opposite calf (Fig. 1*C*). If the latter skin is also damaged he will then of necessity have to use a thigh flap (Fig. 1*D*). Seldom is it necessary to resort to the time-consuming use of the abdominal flap transferred by the wrist. This procedure should be reserved exclusively for those cases in which no other tissue is available.

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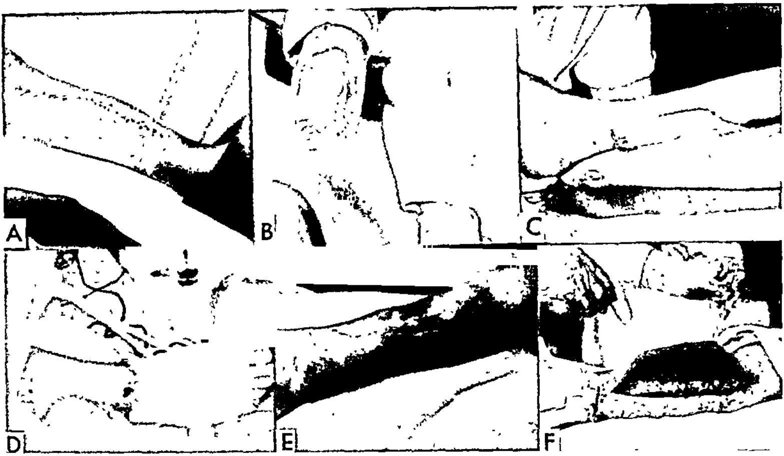

Fig. 1.—*A*, bad position of scar over tibia. *B*, free skin graft to close wound. *C*, extensive cross leg flap. *D*, flap from opposite thigh. *E*, partial flap loss of flap. *F*, delay of flap. Perforating vessels should not be damaged.

When the tissues of the leg adjacent to the defect are healthy, the operation of choice is a double-ended pedicle flap, preferably with use of the skin of the lateral surface of the leg. This flap is recommended for its simplicity, its dependability and the relative shortness of the time required when one adheres to certain fundamental principles. I have had some difficulties with this flap; in my opinion, the circulation should be tested by a delaying operation, since one has no sure method of determining what damage was done to the blood supply at the time the bones of the leg were fractured. On 3 occasions a simple delay of the flap has resulted in some

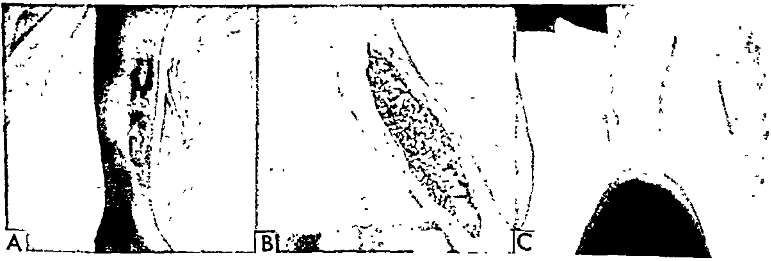

Fig. 2.—*A*, *B* and *C*, repair of extensive defect with exposed bone and metal plate by shift of adjacent tissue after delay operation.

loss of tissue, and in 1 case in which the flap was not delayed a portion of the flap was lost after it was shifted anteriorly (Fig. 1*E*). At present I am convinced that all such flaps should be very carefully delayed and should be made as wide as possible (Fig. 1*F*). The vessels that perforate the fascia of the leg should never be traumatized or cut at the time of the delaying operation, but left intact for blood supply to the central portion of the flap. At least three weeks should be allowed from the time of the delay before the flap is shifted anteriorly. The donor site of the flap may be grafted at the time the latter is shifted or a few days later. By following this technic, I have had satisfactory results with this type of flap (Fig. 2).

SUMMARY

Methods of repair of defects of the anterior tibial surface have been evaluated. The double-ended pedicle flap is recommended in most cases when feasible. In the author's experience, delay of the flap without damage to the perforating vessels is of great value.

ZUSAMMENFASSUNG

Es liegt eine Auswertung der Methoden der Wiederherstellung von Defekten der Vorderfläche des Schienbeins vor. Für die meisten Fälle wird wenn möglich der doppelendige gestielte Lappen empfohlen. Nach der Erfahrung des Verfassers ist ein Aufschub des Lappens ohne Schädigung der perforierenden Gefässe von grossem Wert.

RESUMEN

Se han evaluado los métodos para reparar los defectos de la superficie tibial anterior. Cuando sea posible, se recomienda el colgajo con pedículo en dos extremos. En la experiencia del autor es de gran importancia la liberacion del colgajo sin dañar los vasos perforantes.

RIASSUNTO

Vengono valutati i vari metodi di cura delle perdite di sostanza della superficie anteriore delle tibia. Si raccomanda il trapianto a lembo peduncolato in tutti i casi in cui è possibile. Secondo l'autore questo trapianto è di grande valore.

RÉSUMÉ

Les techniques de chirurgie réparatrice des lésions de la surface tibiale antérieure sont analysées. Le lambeau à double pédicule est recommandé dans les cas où il est pratiquable.

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> Voltaire's mind matured twenty years earlier than other men's; and retained its vigor thirty years longer. His style lends all his ideas the harmony which our ideas sometimes lend to our style.
>
> —*Joubert*

Proctologic Surgery

Further Experiences with Hyaluronidase in Anorectal Surgery

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LOCAL anesthesia by perianal infiltration of procaine is probably the safest for surgical treatment of the lower part of the rectum and the anus. Except for an occasional patient who is elderly or a poor risk, however, this method has not been widely used for routine anorectal procedures because of a number of deterrents, principally (1) inadequacy and insufficient duration of anesthesia, (2) distortion of the tissues at the site of injection, (3) exquisite pain caused by the injection until the anesthetic takes effect and (4) increased risk of infection. It appeared, therefore, that some method to facilitate diffusion of the anesthetic solution in the subcutaneous tissues was necessary, not only to increase the efficiency of the local analgesia but to obviate the other undesirable factors that have limited the popularity of local anesthesia for proctologic operations.

Since 1942, when Consentino[1] and Duran-Reynals[2] first suggested the addition of hyaluronidase to local anesthetic solutions, a great deal has been learned about the pharmacologic properties and clinical uses of the substance.

The principal advantage of the use of hyaluronidase as an adjunct to local anesthesia is that the enzyme hydrolyzes hyaluronic acid ("ground substance" present in the interstices of the tissues), thus promoting rapid diffusion of the anesthetic solution. The rate of spread is proportionate to the amount of the enzyme used, and the extent is proportionate to the volume of the fluid injected.

Obviously, it is necessary to add a vasopressor to the hyaluronidase-anesthetic mixture; otherwise the solution would continue to spread, and the duration of anesthesia would be shortened.

During the past four years I have performed routine anorectal operations with the area under anesthesia, using hyaluronidase[*] with 1 per cent procaine. Various vasopressor drugs were employed in the anesthetic-hyaluronidase mixture; 3,4-dihydroxynorephedrine[**] in 5 cc. ampules of 0.1 per cent solution was found most satisfactory. (This is a local vasoconstrictor that produces less general increase in blood pressure than do other and similar compounds.)

A preliminary series of 357 patients, operated upon with local infiltration anesthesia, was described in November 1954.[3] I have continued to use the same technic routinely in my practice, and now at the time of writing, four years after initiating the method, the series totals 1,200 anorec-

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[*] Hyaluronidase is available as Wydase® (lyophilized stabilized solution) from Wy e U unit is equivalent to the T.

[**] Cobefrin® (Winthrop-St

tal operations. The important advantages of this type of anesthesia in proctologic surgical procedures have become increasingly apparent as the series expanded. Briefly, they are as follows:

1. *The technic is simple and easy.* All patients are given adequate preanesthetic sedation, usually 1½ gr. of pentobarbital orally, administered two hours before, and an injection of 1/6 gr. of morphine and 1/200 gr. of scopolamine one-half hour before, the beginning of the operation.

The patient is placed in the jackknife position upon the operating table, and the buttocks are retracted with 4-inch strips of adhesive tape. The perianal region and buttocks are mechanically cleansed with sodium octylphenoxyethoxyethyl ether sulfonate and hexachlorophene† solution, after which aqueous alkyl-demethylbenzyl ammonium chloride‡ solution is applied. Thorough preoperative preparation of the skin is very important. If the recommended technic is carried out carefully, there should be little or no postoperative infection.

The anesthetic is prepared by adding one 5 cc. ampule of procaine-3,4-dihydroxynorephedrine solution, of 20 per cent strength, to 95 cc. sterile physiologic solution of sodium chloride, which provides a total of 100 cc. of a 1 per cent solution of procaine and a 0.01 per cent solution of 3,4-dihydroxynorephedrine. Since 60 cc. of the anesthetic mixture is usually sufficient, this amount is withdrawn from the total of 100 cc. and combined with 300 USP. hyaluronidase to provide the desired spreading effect. The solution is infiltrated subcutaneously in the perianal region, with a 10 cc. Pitkin syringe, and a small wheal is produced in the left lateral quadrant with a 25-gauge, 1-inch (2.5 cm.) needle. The injection is continued about the anal circumference with a 22-gauge 1½-inch needle. Approximately 35 cc. of the solution is administered in this manner. Then, introducing the examining finger into the anal canal and the lower part of the rectum, one injects approximately 5 cc. of the solution just beneath the anoderm and the mucosa in each quadrant. It is neither necessary nor desirable to inject the solution into the major portion of the sphincter muscle itself.

The duration of anesthesia is usually about forty-five minutes, which generally is sufficient to permit completion of the procedure. This will depend, however, on the surgical technic and the amount of solution used. Rarely in this series was it necessary to repeat the injection of the anesthetic.

On the patient's return from the operating room it is often desirable to administer an injection of 75 mg. of meperidine and 50 mg. dimenhydrinate* to relieve postoperative discomfort, since the effects of the anesthetic wear off rapidly. In the majority of my patients one or two doses of the narcotic suffice.

2. *Analgesia and relaxation are immediate.* The spreading action of the hyaluronidase favors rapid and uniform analgesia. The relaxation and exposure obtained with this technic are, in my experience, superior to those obtainable with any other type of anesthesia. Relaxation, not only of the sphincter but of the perianal tissues, is almost complete. This, in my opinion, is the additional factor that ensures satisfactory exposure of the total operative field.

3. *There is little or no distortion of the tissues* from injection of the anesthetic solution. Thus one of the major objections to the use of local infiltration anesthesia for anorectal operations has been eliminated by the spreading action of hyaluronidase.

4. *Preexistent perianal edema is definitely reduced.* In hemorrhoidectomy, therefore, acute thromboses can be oper-

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‡Zephiran℞ Chloride (Winthrop-Stearns).
†pHisohex℞ (Winthrop-Stearns).

*Dramamine℞ (Searle).

ated upon immediately with no alteration of the usual methods. It may frequently be advantageous also to administer the anesthetic-hyaluronidase solution therapeutically to reduce edema for easier replacement of protrusions when operation is not feasible. Patients with this condition show a surprising improvement after such treatment.

5. *Cleavage planes are readily delineated* with the use of local anesthesia and hyaluronidase. Thus muscle fibers are more easily separated, and the annoying bleeding and subsequent pain from incision of the muscle substance are minimized.

6. *Bleeding during operation is almost completely eliminated.* There is little or no annoyance from capillary bleeding, and the occasional arterial bleeder, usually encountered on the incised mucosal surface, is easily visualized; hemostasis may be obtained without undue trauma. Any capillary bleeding that may occur after dissipation of the effects of the vasopressor may be controlled by insertion into the anal canal of a small cylinder molded from a piece of Gelfoam® (size 100), from which all the air cells have been expressed; the outer end should be serrated with scissors. The cylinder is permitted to remain in place until it disintegrates, which usually occurs after the first sitz bath on the day after the operation.

Postoperative bleeding is no greater than with other types of anesthesia. In this series the incidence was about 3 per cent. If bleeding occurs, it is usually in the unsutured portion of the wound. Pressure or an immediate simple suture, without need of returning the patient to the operating room, is generally sufficient.

Since delayed or secondary hemorrhage has no connection with the anesthetic but is rather related to the surgical technic used, such hemorrhage is not included in this discussion.

7. *Retention of urine is markedly reduced.* Kratzer and Salvati[4] compared the results obtained in 300 consecutive anorectal operations in which spinal anesthesia was employed with a subsequent consecutive series of 300 operations in which local anesthesia with hyaluronidase was chosen. They observed a statistically significant reduction in the incidence of retention of urine in the patients for whom the local anesthetic-hyaluronidase solution was used.

In the group of patients operated upon with spinal anesthesia, retention of urine occurred in 50 per cent in the early part of the study and in about 36 per cent of the later cases. The variation in incidence was based on the fact that in the first 183 cases catheterization was permitted as seemed desirable, whereas, for the later group, catheterization was not ordered unless the patient failed to void for eighteen hours after the operation.

On analysis of the 300 cases in their series in which local anesthesia had been used, with catheterization performed if necessary only after a lapse of eighteen hours, it was noted that retention of urine had occurred in only 13 per cent of the patients.

In my own series the incidence of retention has been extremely low — not more than 5 per cent. In my patients also, catheterization was not ordered unless the patient had not voided for eighteen hours postoperatively.

Tight, bulky perianal dressings and anal packing or tubing are not used, except for the Gelfoam previously described, for my patients. This, in my opinion, also has had a part in lowering the incidence of retention of urine.

8. *Freedom from untoward effects* is another important advantage of this ty[illegible] of anesthesia. There is no danger of hy[illegible] tension, which in[illegible] the risk of [illegible]onary occlusion, or [illegible]ck pain,

more annoying than the operation itself. Ordinarily there is a slight rise in systolic blood pressure, usually about 15 mm. of mercury, which is desirable rather than otherwise. If, in the rare case, the systolic blood pressure should rise sufficiently to cause concern, administration of amyl nitrite by inhalation will immediately lower the pressure as desired. In this entire series of 1,200 cases, amyl nitrite has been used only twice. In both cases the rise in systolic pressure occurred after use of epinephrine as the vasopressor in the anesthetic mixture instead of 3,4-dihydroxynorephedrine.

For a severely hypertensive patient in whom the surgeon prefers not to permit an additional rise in pressure, the vasopressor may be omitted from the local anesthetic-hyaluronidase mixture.

Only 1 postoperative abscess developed in this series; this occurred in one of the early cases.

Hyaluronidase has proved completely nontoxic in clinical use, as was confirmed in this series of 1,200 operations. In no case was there any evidence of toxic or allergic effect attributed to the enzyme.

9. *The term of hospitalization after an anorectal operation is remarkably diminished.* The patients are usually discharged on the third postoperative day.

SUMMARY

A large number of anorectal operations have been performed over a period of four years with local infiltration anesthesia induced by a mixture of procaine, hyaluronidase and a vasopressor (3,4-dihydroxynorephedrine). In this combination, each component is of particular advantage for local anesthesia in proctologic surgical procedures.

The desirable features of the method include: (1) ease and simplicity of technic; (2) immediate analgesia and relaxation of sphincter and perianal tissues; (3) little or no tissue distortion; (4) definite reduction of perianal edema; (5) more satisfactory delineation of cleavage planes; (6) almost complete elimination of capillary bleeding during operation; (7) reduction of urine retained; (8) freedom from untoward effects, and (9) diminished hospitalization after anorectal operations.

This type of anesthesia is superior to any other, in the author's opinion, for the majority of surgical procedures on the lower part of the rectum and the anus, and is preferred by patients, many of whom fear the various spinal anesthetic technics.

SUMARIO

Descreve um grande número de operações anoretais realizadas com infiltração local, durante quatro anos, pela mistura de procaina, hialuronidase e um vaso-pressor (3,4-dyhydroxynoroefedrina). Nesta mistura cada componente químico desempenha um papel vantajoso na anestesia protológica.

As caracteristicas do método incluem: 1) simplicidade técnica; 2) analgesia imediata com relaxamento do esfincter e dos tecidos peri-anais; 3) mínima ou nenhuma distorção dos tecidos infiltrados; (4) redução do edema perianal; 5) maios facilidade na clivagem dos planos operatorios; 6) eliminação quase completa do sangramento operatorio; 7) redução da retenção urinária; 8) ausência de efeitos indesejáveis; 9) diminuição do tempo de hospitalização depois das operações.

Este tipo de anestesia é superior a qualquer outro, na opinião do A. na maioria dos métodos cirurgicos praticados na porção baixa do reto e do anus; é preferido pelos pacientes muitos dos quais têm receio da anestesia raquidiana.

RESUMEN

Se han efectuado un gran número de operaciones anorectales en un período de

cuatro anos con infiltración local inducida con una mezcla de procaína, hialmo midasa y un vasopresor (3,4-dihidroxinorefedrina). Cada componente es de particular importancia para la anestesia local en cirugía proctológica.

Las características ventajosas del método incluyen: 1) técnica simple y fácil, 2) analgesia immediata y relajación de esfinteres y tejidos perianales; 3) poca ó ninguna distorsión de tejidos; 4) reducción notoria de edema perianal; 5) mas fácil identificación de planos de clivaje; 6) casi asusencia absoluta de hemorragia capilar durante la operación; 7) reducción de orina retenida; 8) ausencia de efectos indeseables; y 9) menor hospitalización después de operaciones anorrectales.

En la opinión del autor este tipo de anestesia es superior a cualquier otro para la mayoría de los procedimientos quirúrgicos en la parte inferior del recto y del ano y es preferida por los pacientes, muchos de los cuales temen los métodos que exigen anastesia espinal.

RÉSUMÉ

Un grand nombre d'opérations anorectales ont été pratiquées durant une période de quatre ans, en utilisant des infiltrations locales d'un mélange de procaine, de hyalunonidase et d'un vaso-constricteur (3,4-dihydroxynoréphédrine). Dans cette composition chaque produit présente un avantage bien défini pour l'anesthésie locale dans ce genre d'opération.

La méthode présente les avantages suivants: 1) technique simple et facile; 2) analgésie immédiate, relâchement du sphincter et des tissus péri-anaux; 3) absence de distortion tissulaire, ou distortion minime; 4) nette diminution de l'oedème péri-anal; 5) meilleure séparation des plans de clivage; 6) suppression presque complète, durant l'opération, de l'hémorragie capillaire; 7) diminution de la rétention urinaire; 8) absence de complications fâcheuses; 9) raccourcissement du temps d'hospitalisation.

Selon l'auteur, ce mode d'anesthésie est supérieur à tout autre pour la majorité des interventions portant sur la partie inférieure du rectum et sur l'anus; il est apprécié des malades, dont beaucoup appréhendent une anesthésie rachidienne.

RIASSUNTO

Negli ultimi 4 anni sono state eseguite numerose operazioni ano-retalli in anestesia locale ottenuta con una miscela di novocaina, ialuronidasi e un vasocostrittore (la 3,4-diidrossinorefedrina). In questa miscela ogni componente si dimostra particolarmente favorevole all'anestesia per la chirurgia proctologica.

Fra i vantaggi si devono annoverare (1) la facilità e la semplicità della tecnica; (2) l'analgesia immediata e il rilasciamento dello sfintere e dei tessuti perianali; (3) lo scompaginamento modesto o minimo; (4) la riduzione dell'edema perianale; (5) una soddisfacente delimitazione dei piani di clivaggio; (6) una pressochè completa cessazione del sanguinamento capillare; (7) una riduzione della ritenzione urinaria; (8) la mancanza di effetti collaterali spiacevoli e infine una diminuzione del periodo di ospedalizzazione post-operatoria.

Questo tipo di anestesia è superiore ad ogni altro, secondo l'autore, per la maggior parte degli interventi sul retto distale e sull'ano, ed è anche preferito dai pazienti molti dei quali temono l'anestesia spinale.

ZUSAMMENFASSUNG

In einem Zeitraum von vier Jahren ist eine grosse Anzahl ivon anorektalen Operationen mit örtlicher Infiltration einer Mischung von Novocain, Hyaluronidase

und einem blutdrucksenkenden Mittel (3, 4-dihydroxynorephedrin) ausgeführt worden. Jeder Bestandteil dieser Zusammensetzung bietet bestimmte Vorzüge für die lokale Betäubung bei proktologischen chirurgischen Eingriffen.

Zu den erfreutlichen Vorzügen des Verfahrens gehören. 1. die Leichtigkeit und Einfachheit der Technik, 2. die unmittelbar eintretende Schmerzunempfindlichkeit und Entspannung des Schliessmuskels und des perianalen Gewebes, 3. Verringerung oder völlige Vermeidung von Verziehungen des Gewebes, 4. sichere Herabstezung des perianalen Ödems, 5. bessere Möglichkeit der Abgrenzung der Gewebsspalten, 6. fast völlige Ausschaltung kapillärer Blutung während der Operation, 7. Herabsetzung der Harnverhaltung, 8. Ausbleiben von Nebenerscheinungen und 9. Verkürzung des Krankenhausaufenthaltes nach anorektalen Operationen.

Nach Ansicht des Verfassers ist diese Form der Anästhesie für die Nehrzahl chirurgischer Eingriffe am unteren Mastdarmabschnitt und am After allen anderen überlegen und wird von vielen Kranken, die sich vor anderen mit Spinalanästhesie einhergehenden Techniken fürchten, bevorzugt.

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It is commonly urged that, in a war between Liberals and fanatics, the fanatics are sure to win, owing to their more unshakable belief in the righteousness of their cause. This belief dies hard, although all history, including that of the last few years, is against it. Fanatics have failed, over and over again, because they have attempted the impossible, or because, even when what they aimed at was possible, they were too unscientific to adopt the right means; they have failed also because they roused the hostility of those whom they wished to coerce. In every important war since 1700 the more democratic side has been victorious.

—*Russell*

Thoracic Surgery

Substitution for the Esophagus

Report of Eight Cases

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FOR more than half a century surgeons have been seeking and never quite discovering the ideal operation for esophageal carcinoma. Fairly satisfactory surgical procedures have been worked out for the management of carcinoma occurring in the cervical portion of the esophagus and for growths arising in the lower one-third or cardiac portion. When the malignant growth is located somewhere between the thoracic inlet and the level of the left main stem bronchus, surgeons face formidable technical difficulties, which in many instances will effectively prevent them from doing a satisfactory operation. In this anatomic area surgical reconstruction is also more hazardous and more technically difficult than it is at either the upper or the lower portion of the gullet.

Discussion in this report is limited to carcinomas arising in the upper half of the thoracic portion of the esophagus, and it is recognized at the outset that the prognosis for such lesions is very poor. Most of the unlucky patients have a short life expectancy at best, so it becomes the surgeon's duty to restore to them as soon as possible the ability to manage their own saliva and take liquid and solid food by mouth. Gastrostomy alone is a poor method of palliation for many reasons, even though it does prolong life for slightly more than an average of four months.

Most methods of reconstruction after eosphagectomy leave something to be desired, and some leave the patient in a miserable condition right up to the time of his death. In my own effort to find the best method of replacement after total esophagectomy, a number of procedures have been tried. Forty-eight patients have undergone total esophagectomy of the Torek type, and for 31 of these it has been possible to reestablish the swallowing function.

Six different methods of esophagoplasty have been given a trial. My first attempts were made by the use of rubber or plastic appliances, but after trial of this method in several cases it was given up as hopeless. Next I tried cutaneous anterothoracic esophagoplasty in 6 cases and ran into the usual complications—gastric regurgitation, ulceration, stenosis and prolonged morbidity. My third attempt was directed toward the use of the jejunum, in 2 cases an anterothoracic jejunoesophagostomy was performed, and in 4 cases a retrosternal jejunoesophagostomy was done. One of the patients who underwent reconstruction by the anterothoracic procedure has gone along well over the five-year period. I also had some success when I turned to gastroesophageal anastamosis in the neck, and this type of operation was carried out in 10 instances. In my latest attempts to solve the

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problem I have used the retrosternal right colon transplant. In considering the group of 8 cases to be reported it must be borne in mind that the patients all had carcinomas located in the upper thoracic portion of the esophagus and that, in each instance the lesion was resected through a right thoracotomy by a procedure in many respects similar to the one devised and successfully carried out by Dr. Franz Torek at the Old German Hospital in New York City in 1912.

If for no other reasons than those of gross structure and anatomic location, it is known that the upper thoracic portion of the esophagus does not permit the performance of a good operation for carcinoma. It is also obvious that carcinoma of the esophagus spreads extensively in a longitudinal manner through the submucosal lymphatics; therefore, a total esophagectomy should be done. With a 46 per cent rate of recurrence at the site of anatomosis, it seems to me that the case against segmental esophageal resection for carcinoma is well established and that complete esophagectomy is therefore preferable.

The use of the right half of the colon for esophagoplasty is not a new idea. It was first reported in 1911 by Kelling,[1] and in 1934 Ochsner[2] collected reports of 20 cases from the world literature. Most of these reports came from European clinics, and the operating surgeons usually brought the colon up to the neck through a subcutaneous tunnel. Sherman and others[3] have recommended a retrosternal tunnel for the colon, and this method was employed in my cases. This combined procedure, which is essentially a Torek esophagectomy plus a reconstructive stage, can be done either in one or in two operations.

If the procedure is to be done in two stages, I first do a right thoracotomy and a Torek esophagectomy, leaving the patient with an esophagostoma in the neck and a gastrostomy stoma in the left upper abdominal quadrant. To facilitate the second stage procedure by leaving plenty of room for a cologastrostomy well up on the stomach, away from the pylorus, the gastrostomy should be made high in the stomach and to the left.

Two weeks later the second stage is carried out. The gastrointestinal tract is prepared by the following technic: Seven days before the operation the patient is given 4 Gm. of sulfasuxidine by gastrostomy tube every six hours, and a low residue diet is ordered. Two days prior to the operation clear liquids are started, with 1 Gm. of neomycin every six hours.

TABLE 1.—*Data on Case 1*

Case 1 (F. A., male, aged 56)	
Location of lesion	Middle third of esophagus
Pathologic type	Epidermoid carcinoma
Operation	1. Torek esophagectomy 7-22-55 2. Colon transplant 8-22-55
Complications	1. Cervical abscess 8-28-55 2. Hemorrhage-carotid artery 8-29-55 3. Death 8-29-55

The night before operation a colon irrigation is given until clear fluid is returned.

The abdomen is entered by an incision approximately from the xiphoid to the umbilicus, and the abdomen is explored for metastatic carcinoma. The cecum and the right half of the colon are then mobilized, and the ileocolic and right colic arteries are occluded with bulldog clamps, care being taken to place the clamp proximal to anastomosing vessels. The ileum and the transverse portion of the colon are cleared at the point where division is to take place, and a rubber-shod clamp is placed across each to prevent bleeding through the bowel wall or the immediately adjacent vessels. If there is good circulation after fifteen minutes the right colic and ileocolic arteries are divided near their point of origin and the ileum is transected. During the waiting period an appendectomy is performed.

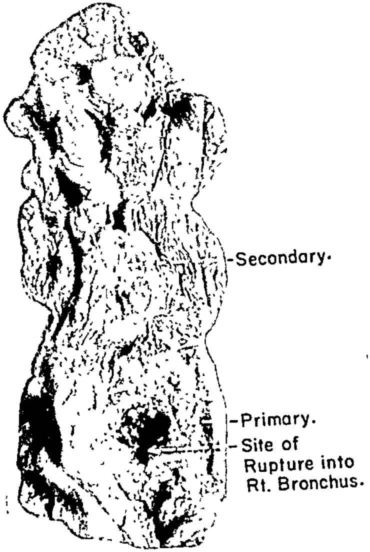

Fig. 1

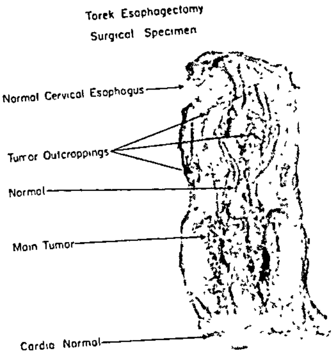

Fig. 2

The substernal tunnel is now prepared and the retrosternal space entered from above by a collar incision in the neck and from below by an incision of the sternal origin of the diaphragm at the xiphoid. The tunnel is then made by blunt dissection, largely with the finger and hand or with gauze dissectors. When the tunnel is adequate a catheter is passed downward through it, the ileal sutures fixed to it and the terminal portion of the ileum and colon drawn up into the neck. Care is taken to prevent twisting the blood vessels and tearing the mesenteric vessels by too much stretching. In my opinion it is important not to tear the pleura and have the colon lie in the free pleural space, since redundant loops could easily become caught, distended, obstructed or even gangrenous.

The esophageal stump is mobilized and the ends freshened. If sufficient length is available, the ileum is removed and an esophagocecostomy is performed. If length is lacking and viable,

TABLE 2.—*Data on Case 2*

Case 2 (C. R., male, aged 56)	
Location of lesion	Upper third of esophagus
Pathologic type	Squamous carcinoma, Grade II
Operation	1. Torek esophagectomy 5-3-55 2. Colon transplant 7-11-55
Complications	1. Paralysis of left side of larynx 2. Cervical fistula

an esophagoileostomy is done.

The transverse portion of the colon is divided at a convenient site for the cologastrostomy, with great care to preserve all middle colic branches. An end-to-side cologastrostomy is performed. This should be placed as high on the stomach as possible and on the anterior surface.

An end-to-end ileotransverse colostomy is then performed to restore continuity of the bowel.

Results.—Eight patients have undergone total esophagoplasty with use of the right half of the colon; 7 in two-stage operations and 1 by resection and reconstruction in a single stage. There was 1 postoperative death, caused by invasion of the common carotid artery by the carcinoma, giving rise to a fatal hemorrhage.

In each patient a slight cervical fistula developed at the site of the esophageal anastomosis. Three of these fistulas closed spontaneously in ten to thirty days, 1 continued to drain intermittently for two months. This proved to be a small diverticulum. It was closed surgically. At the time of writing it has remained continent for seven months, and the patient has good swallowing function.

Gastric obstruction has been a problem in only 2 cases, in which pyloroplasty had not been performed at the time of esophagectomy or at the time of reconstruction. Two women had severe diarrhea after long periods of broad spectrum antibiotic therapy.

"Dumping" of clinical importance has not been encountered in those patients in whose cases continuity was restored.

SUMMARY

Eight cases of total esophagectomy with reconstruction of the continuity of the gastrointestinal tract by use of the right half of the colon are reported. In 7 the operations were done in two stages, in 1, in a single combined stage.

Seven patients survive at the time of this report. Four are without evident recurrence and are able to eat relatively normally after closure of their gastrostomy. Two others still have complications and need a functioning gastrostomy, but they show no recurrent carcinoma. One has generalized spread of his malignant tumor, although he eats and swallows well and is without need of a gastrostomy. One patient died after the operation because of unrecognized hemorrhage from a perforated carotid artery.

RÉSUMÉ

L'auteur rapporte 8 cas d'oesophagectomie totale avec rétablissement de la continuité du tractus gastro-intestinal, en utilisant la moitié droite du colon; 7 cas

ont été opérés en deux temps, le 8e en un temps combiné.

Sept malades sont actuellement encore en vie. Quatre d'entre eux ne présentent aucune évidence de récidive, ils peuvent s'alimenter de façon relativement normale après fermeture de la gastrectomie. Dans deux cas on note encore des complications nécessitant une gastrostomie active (pas de récidive carcinomateuse). Un malade est atteint de cancer généralisé, cependant il s'alimente bien et la déglutition est normale sans gastrostomie. Un malade est décédé après l'opération des suites d'une hémorragie non diagnostiquée due à une perforation de la carotide.

RESUMEN

Se reportan ocho casos de esofagectomía total con restablecimiento de la continindad del tracto gastrointestinal usando hemicolon delecho. En 7 casos la operación se efectuó en dos tiempos; en uno, en un solo tiempo combinado.

Siete pacientes viven hasta la fecha. Cuatro están sin recidivas evidentes y son capaces de comer casi normalmente después del cierre de la gastrostomía. Otros dos aún tienen complicaciones y necesitan de la gastrostomía, pero no muestran carcinoma recidivante. Uno tiene invasión generalizada pero come y traga bien y no necesita la gastrostomía. Un paciente murió después de la operación por hemorragia no observada de una arteria carótida perforada.

SUMARIO

Apresenta oito casos de esofagectomia total com reconstrução pelo uso de metade esquerda do colo. Em 7 operações praticou o tratamento em 2 estagios. Sete pacientes sobrevivem. Quatro não apresentam recidiva e são capazes de comer relativamente bem apos o fechamento da gastrostomia. Os outros dois ainda têm complicações, necessitando de permanecer com as gastrostomia porem sem sinais de recidiva. Um paciente tem disseminação malina do tumor embora se alimente e enula sem necessidade degastrostomia. Um doente morreu apos a operação por uma hemorragia não reconhecida e devida a uma lesão da carótida.

ZUSAMMENFASSUNG

Es wird über acht Fälle von totaler Speiseröhrenresektion mit Wiederherstellung der Kontinuität des Magendarmkanals unter Verwendung der rechten Dickdarmhälfte berichtet. In sieben Fällen wurde die Operation in zwei Sitzungen ausgeführt, in einem Falle erfolgte ein kombinierter Eingriff in einer Sitzung.

Zur Zeit der Niederschrift dieses Berichtes befinden sich noch sieben der Patienten am Leben. Vier davon weisen keine Zeichen eines Rückfalls auf und sind in der Lage, nach Schluss der Magenfistel, verhältnismässig normal zu essen. Zwei andere Kranke leiden noch unter Komplikationen und sind noch auf die Funktion der Magenfistel angewiesen, zeigen aber kein rezidivierendes Karzinom. Ein Kranker zeigt eine allgemeine Aussaat der bösartigen Geschwulst, isst und schluckt jedoch gut und braucht keine Magenfistel. Ein Kranker starb nach der Operation an einer unerkannten Blutung aus einer perforierten Halsschlagader.

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Editorials

The Barber Surgeons and the Liberation of Surgery

A RECENT novel by Garet Rogers called *Lancet,*[1] a fictional biography of John and William Hunter, opens with an imaginary conversation among a group of physicians seated in a bay window in a coffee house in the Little Piazza in Covent Garden.

> "The year seventeen forty-five," the Elderly Physician took up suddenly, "marked the greatest blow ever to befall physic, gentlemen. When those rascally surgeons set themselves up as a separate group from the barbers, physic suffered a . . ."
>
> "Speaking of surgeons," Dr. Grimes pounced happily, "I have heard a new quip about them."
>
> Dr. Snapes leaned forward eagerly. "Ah?"
>
> ". . . cruelest blow ever dealt," the Elderly Physician tolled on.
>
> Whatever Dr. Grimes might have felt about the surgeons personally he was in no doubt that the Elderly Physician was dealing a cruel blow to his story.
>
> "Mark me, they'll be calling themselves doctors next. Or petitioning the Crown to that effect. Not a man in the lot of them is good enough to shave my coachman."
>
> "Shave!" Dr. Grimes cried. "That leads me to my little jest about . . ."
>
> "Cheselden," the Elderly Physician rambled on crankily, "playing the great surgeon. Oh, the great surgeon indeed, our Mr. Cheselden. Advising me I must submit to cutting for my stone!" At last he had led himself on to such a painful topic that he could not proceed, and so sat silent and wretched, staring down at his coffee.
>
> Dr. Grimes seized his chance. "My jest! They are saying that a surgeon forgot himself and lathered a leg before amputating it."
>
> The youngest physician tittered dutifully.
>
> "Why," the Elderly Physician asked, "should he do a thing like that?"
>
> "Doctor, it is a jest. He was a barber surgeon, you see, before the barbers and the surgeons parted company." Egod, the old fool's wits were wandering; at any rate the jest was ruined.

In an address on "The Evolution of Surgical Organizations" which I gave before the assembly of the International College of Surgeons in Geneva in 1955,[2] I sketched briefly the manner in which organizations of surgeons have served to elevate standards of training and the ethics of surgical practice. This evolution during six centuries has seen the surgeons pass from technical barbarity to the scientific intricacies of electronics and biochemistry.

The state of medical and surgical practice in Europe during the centuries from 1300 to 1800 was a mixture of tradition, superstition, observation, and quackery. Surgery was regarded as an inferior practice, unworthy of a scholar. The physicians were learned, they had studied Latin. The surgeons were itinerant, traveling from village to city, from country to country. The principal procedures involved cutting for stone, relieving hernia, couching for cataract. *The physicians prescribed blood-letting, but the barbers and surgeons did it.*

Lecture given at the International Surgeons' Hall of Fame on April 23, 1957, in the series offered by the School of the History of Surgery and Allied Sciences of the International College of Surgeons.

In England in the fourteenth century the term "leech" was generally applied to the members of the medical profession. They had to belong to the guild or fraternity of Barbers, and might be known as a Barber practicing surgery. There were a few learned masters of surgery. After the union of guilds in 1450, the appellation "Barber Surgeon" came into use. In German countries the barber was generally connected with baths and came to be known as Bader or Balneator. These attendants let blood, sold ointments, pulled teeth, practiced cupping and gave enemas. The monks in the monasteries who required their services for the tonsure, employed them also for blood-letting. Blood-letting was practiced periodically.

John Flint South,[3] who was twice president of the Royal College of Surgeons, compiled the earliest records of the barbers and surgeons of the city of London under the title "Memorials of the Craft of Surgery in England." This is no doubt the most authentic work on the beginnings of the barbers who were surgeons and the surgeons who were masters of surgery, their ultimate union as barber-surgeons and their final emergence as the Royal College of Surgeons.

Among the great surgeons of Europe in the fourteenth century were Lanfranc who died in 1306, de Mondeville who lived from 1260 to 1320, Guy de Chauliac, who died in 1368, and Jan Yperman, a Flemish surgeon who died in 1350.

In England John Arderne was born in 1307. D'Arcy Power,[4] in a Harveian Lecture delivered March 12, 1914, provides an interesting picture of this original surgeon who was skillful in leechcraft, a believer in spells, and the author of a manuscript on a roll of vellum, written before printing was known. The original manuscript is now in the Royal Library in Stockholm. Lanfranc, de Mondeville and de Chauliac were well educated surgeons; Arderne learned his surgery in the army. As an example of his belief in magic and spells is his treatment of epilepsy. He recommended that the words Jasper, Melchior and Balthazar be written with blood drawn from the auricular or little finger of the patient. The paper bearing the words was worn by the patient, who said daily for a month three Pater Nosters and three Ave Marias for the souls of the fathers and mothers of the three kings. For constipation Arderne wrote: "Let the man drink 'de brodii'." This was the equivalent of beef tea. However, this was not the common treatment. "If he be rich" he was to have beef tea according to Arderne, "but if he is a pauper he may just drink his own urine."

Here is an example of the surgery of John Arderne:

> "I saw a young man with a stone as big as a bean so lodged in his penis that it could not escape through its eye, neither could it be pushed back, but it remained in the middle of the organ as it is here shown. I cured him easily with an incision, for I put him on his back and tied his member with linen threads on each side of the stone to prevent its shifting, and after making a small cut with a lancet over the stone I squeezed it out. I then sutured the skin with a needle and thread over the hole, and dressed it with white of egg and finely ground flour, and having wrapped up the penis in a piece of old and thin linen I let him go in peace for three days. I cut and removed the thread at the next dressing, and in less than a fortnight I had cured him completely. There is no need for alarm in these cases, even though the urine escapes from the wound for three or four days after such an operation, for the patient will certainly be cured."

As might be expected the ignorance of anatomy and physiology displayed by the barbers and itinerant surgeons brought them frequently into conflict with the physicians and with the victims of their barbarities. In 1337, Garrison says, a strolling eye surgeon was thrown into the

Oder because he failed to cure John of Bohemia of his blindness. The strolling medieval montebanks frequently put out an eye, mangled the viscera in cutting for stone and caused death in their operations on hernia. They believed castration was necessary because they thought the intestines and testicles were inclosed in the same sac. The physicians looked down on the surgeons and the surgeons looked down on the barbers, and the experienced barbers looked down on the imposters. Out of this situation came the first abortive movements for some type of control.

The master surgeons, imbued with the sacredness of their calling, wrote words of inspiration and guidance which have come down to us; these are the true canons of surgery. Thus de Mondeville wrote:

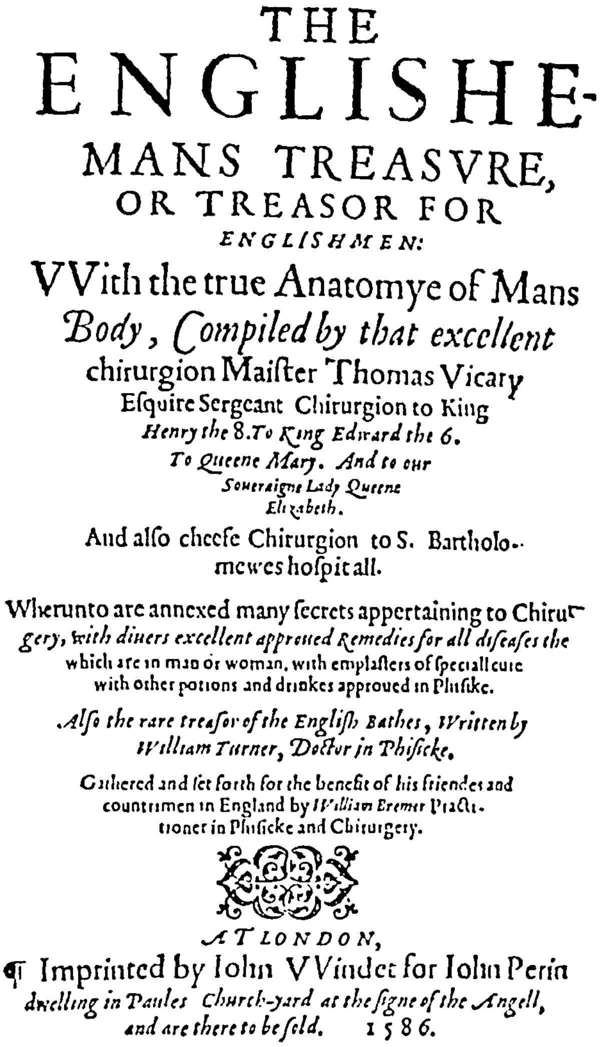
> "You, Surgeons, if you have operated in the homes of the rich for an adequate sum, and in the homes of the poor for charity, you should fear neither fire, nor rain, nor wind; you have no need of going into religious places nor of making penitential pilgrimages, because by your science you are able to save your souls, to live not in poverty, and to die in your own homes, to live in peace and in joy, and to exult because your recompense is grand in Paradise."

Lanfranc of Milan said:

> "It is necessary that a surgeon should have a moderate and temperate disposition. That he should have well-formed hands, long slender fingers, a strong body, not inclined to tremble and with all his members trained to the capable fulfilment of the wishes of his mind. He should be of deep intelligence and of a simple, humble, brave, but not audacious disposition. He should be well grounded in natural science, and should know not only medicine but every part of philosophy; should know logic well, so as to be able to understand what is written, to talk properly, and to support what he has to say by good reasons."

Guy de Chauliac preached:

> "The surgeon should be learned, skilled, ingenious and of good morals. Be bold in things that are sure, cautious in dangers; avoid evil cures and practices; be gracious to the sick, obliging to his colleagues, wise in his predictions. Be chaste, sober, pitiful, and merciful; not covetous nor extortionate of money; but let the recompense be moderate, according to the work, the means of the sick, the character of the issue or event, and its dignity."



THE
ENGLISHE-
MANS TREASVRE,
OR TREASOR FOR
ENGLISHMEN:
VVith the true Anatomye of Mans
Body, Compiled by that excellent
chirurgion Maiſter Thomas Vicary
Eſquire Sergeant Chirurgion to King
Henry the 8. To King Edward the 6.
To Queene Mary. And to our
Soueraigne Lady Queene
Elizabeth.
And alſo cheefe Chirurgion to S. Bartholo-
mewes hoſpitall.

Wherunto are annexed many ſecrets appertaining to Chirur-
gery, *with diuers excellent approued Remedies for all diſeaſes the*
which are in man or woman, with emplaſters of ſpeciall cure
with other potions and drinkes approued in Phiſike.

Alſo the rare treaſor of the Engliſh Bathes, Written by
William Turner, Doctor in Phiſicke.

Gathered and ſet forth for the benefit of his friendes and
countrimen in England by *William Bremer* Practi-
tioner in Phiſicke and Chirurgery.

AT LONDON,
¶ Imprinted by Iohn VVindet for Iohn Perin
dwelling in Paules Church-yard at the ſigne of the Angell,
and are there to be ſold. 1586.

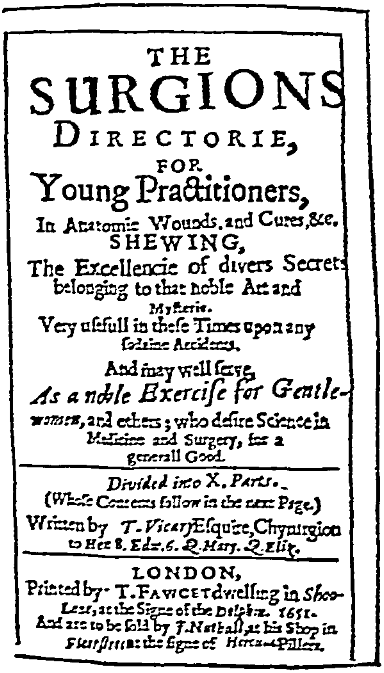
And all of these pronouncements were of the fourteenth century!

At the same time the barbers had formed a guild. In 1308 in the reign of Edward II, Richard had been chosen supervisor of the barbers. Similar guilds of barbers had been developed in York, in Exeter, and other large towns. They would assemble on a special saint's day and after attending mass dine together and then elect their officers for the ensuing year. In the Barbers Guild women might become members but could not hold high office. By 1375 some of the barbers had come to be barber surgeons and the guild was divided into two classes—the barbers who practiced shaving and the barbers who practiced surgery. About 1375 the Guild of Barbers secured an ordinance that "no unlicensed person of the barbers would be appointed." The record of this ordinance follows:

> On the sixth day of October, in the 49th year of the reign of King Edward the Third, after the Conquest (A.D. 1375) John Warde being Mayor. To the honorable and wise Lords the Mayor and Aldermen of the City of London; the good folk Barbers of the said city show that from day to day there come from Uppelande, Men, Barbers, little skilled in their craft, into the said city, and take houses and intermeddle with barbery, surgery, and with the cure of other sicknesses, whereas they know not how to do such things nor ever were qualified in that craft to the great damage and cheating of the people and to the great scandal of all the honest barbers of the said city: wherefore the said good folk pray that it would please your honorable lordships for God's sake and in the work of charity to ordain and establish that henceforth no such stranger coming into the said city from Uppelande or from any other part, whatever be his condition should occupy house or shop of Barbery in the city itself before he has been found able and skilled in the said art and craft of barbery and that by trial and examination of the good folk barbers of the city itself. And that you would please to ordain and establish that from henceforth there should be for all time two honest persons of the said trade chosen by common assent to be guardians of the said craft. That these two should be presented to the Mayor, Recorder and Aldermen of the said city and sworn before them well and loyally to rule their mystery to the best of their power and skill. And that the masters should oversee the tools of all the said art that they be good and fitting for the use of the people to avoid the peril which might happen. And that on the complaint of the two masters all rebels from the said craft shall be made to come before you and whoever shall be found in defiance of this ordinance shall pay to the chamber xl^s^. And that henceforth no men of this craft shall be received into the franchise of the city if he have no witness for honesty and ability by good examination before you, and that no stranger shall hold house or shop of this craft within the said city nor within the suburbs thereof. And that this ordinance be enrolled in the chamber of the Gyhall (Guildhall) of London to endure for ever.
>
> Which was granted to them.

And therefore

ne



THE
SURGIONS
DIRECTORIE,
FOR
Young Practitioners,
In Anatomie Wounds, and Cures, &c.
SHEWING,
The Excellencie of divers Secrets
belonging to that noble Art and
Myſterie.
Very uſefull in theſe Times upon any
ſodaine Accidents.
And may well ſerve,
As a noble Exerciſe for Gentle-
women, and others; who deſire Science in
Medicine and Surgery, for a
generall Good.

Divided into X. Parts.
(*Whoſe Contents follow in the next Page.*)
Written by *T. Vicary* Eſquire, Chyrurgion
to *Hen. 8. Edw. 6. Q. Mary. Q. Eliz.*

LONDON,
Printed by T. FAWCET dwelling in *Shoo-*
Lane, at the Signe of the *Dolphin*. 1651.
And are to be ſold by *J. Nuthall*, at his Shop in
Fleetſtreet at the Signe of *Hercules-Pillars*.

> were chosen Masters of the Barbers and were sworn well and truly to govern their mystery etc. and duly present defaults.

Apparently this was the first formal licensure of surgeons of which there is definite record.

In 1354 an inquisition was held in London before which three master surgeons testified that "one Thomas de Shene who had a certain enormous and horrible hurt on the right side of the jaw had been cared for by one John Le Spicer of Cornhalle." They testified that Le Spicer "had not been expert in his craft or art and had failed to call in counsel and assistance by which he might have cured the injury but that through the want of his skill the said injury under his care became apparently incurable." Whereas the Bishop of London or the Dean of St. Paul's had previously been authorized to license individuals to practice surgery, this licensure was in the hands of the Mayor and the Aldermen by 1368.

Now began arguments and competition between the barbers who were surgeons and the master surgeons. Petition after petition was filed with the Mayor and Aldermen and the sheriff and in 1409 the barbers got a decision that they "should forever peaceably enjoy the privileges contained in the ordinance without scrutiny of any person of other craft or trade than barbers. And this neither in shavings, cutting, bleeding, nor other thing in any way pertaining to barbery or such practice of surgery as is now used or in future to be used within the craft of the said barbers."

By 1415 it was reported to the Mayor and the Aldermen that certain barbers "inexperienced in the art of surgery, very frequently take charge of sick and wounded persons with the intent of fraudulently acquiring their goods; thereby the sick were often worse off at their departure than at their incoming, and on account of the unskillfulness of these barbers were oftentimes maimed, to the scandal of the skilled, and the manifest harm of the people." Whereupon it was ruled that "the barbers should choose two, the ablest, wisest, and most discreet of all the barbers practising the surgical faculty, to minister what in their opinion was wanting in cases of death and maim." Two were selected "who took oath well and faithfully to oversee and superintend their brethren, to keep the rules and ordinances of the craft, to spare no one for love, favour, lucre, or hate; diligently and without concealment to present to the Chamberlain of the City all faults which they might detect. At all times when called upon so to do to superintend, as in duty bound, all wounds, bruises, maims, and other ills, without asking aught for their trouble." This ordinance was not effective because the barber surgeons refused to call the overseers into consultation. Moreover, many surgeons and also barber surgeons with repute went to the wars which Henry V was waging in France and thus gave opportunity for many unqualified to begin work in London. This brought new petitions to the Mayor and Aldermen. The law was made more stringent and two new overseers were selected.

Let us return now to John of Arderne who was born in 1307. When he was more than 60 years old after practicing in Newark, he moved to London where he specialized in fistula. He kept a record of his cases and of his fees which, incidentally, were tremendous when converted into modern values. For the cure of a fistula his fee was 40 pounds down, with a suit of clothes and 100 shillings annually as long as the patient lived. In modern times this would mean $40,000 down and $6,000 annually.

His advice to doctors on their conduct and ethics was also remarkable. He recommended that "they have clean hands.

well shaped nails, cleaned of all blackness and filth. He should hear many things and speak but few, for a wise man sayeth, it seemeth more to use the eres than the tunge." He also said that "if you had been still you would have been held a philosopher . . . When he shall speak, be the word short and as much as possible fair and reasonable and without swearing."

When Henry V went to war across the channel he arranged for a physician and surgeon to accompany him. His surgeon was Thomas Morstede. The surgeon was directed to take with him twelve of his own craft. He was given the privilege of choosing those who should accompany him. Subsequently the Barbers and Surgeons Company and the Corporation of Surgeons after them were called on to choose surgeons to serve in the army and navy.

Sometime between May, 1421, and May, 1423, the College of Physicians under the control of a rector of medicine joined with the surgeons in petitioning the Aldermen for authority to improve the professional acquirements and social position of themselves and their successor. The surgeons who joined in this move were a society distinct from either the barbers or the barber surgeons and probably originated from the military surgeons. This group got authority to conduct examinations for both medicine and surgery, to assign physicians or surgeons to the poor, to visit apothecary shops and throw away bad medicines, and to make sure that anyone who claimed to have graduated in medicine could submit proof of it. By 1435 this conjoint college of physicians and surgeons seems to have disappeared and in that year regulations were established for the government of the Guild of Surgeons. Dates were established for their assembling and the choosing of the masters. The regulations included the control of foreign physicians, the taking of cases, of apprentices, and many other types of regulation. An oath was created which was to be taken by each member.

The masters in surgery up to this time had not made any fusion with the barber surgeons. In the year 1452 the Guild of Barbers in the city of London obtained a

Manuscript of *De Arte P* *ia*
of Master John A

grant of arms and a charter in 1462 which granted authority to the barbers as a class, but ostensibly only, for the shavers or trimmers of beards were called barbitonsor. The preamble to the charter recites how our "beloved, honest, and free men of the trade of barbers of the City of London using the craft or faculty of surgeons have for a long while diligently and laboriously occupied themselves with the wounds, bruises, hirts, and other ailments of our lieges, in tending and curing our lieges, as well as in bleeding them in drawing their teeth." It continues "On account of the ignorance of those who practice surgery, both surgeons and strangers who do not belong to the brotherhood or freemen of the City, 'other of our lieges have gone the way of all flesh, whilst others from the same cause are sick and incurable'." They received the right to oversee, scrutinize and govern all freemen surgeons who acted as barbers in the city of London, and all strangers. They had the oversight of all instruments, plasters, and all medicines for curing wounds, and, finally, they had the authority to fine and imprison those who violated. Finally they were relieved from the duty of serving on juries and inquests.

In the meantime, the surgeons had obtained an exemption from keeping watch and bearing arms. In 1492 arms were granted to the Guild of Surgeons. From this time on the barbers who practiced surgery and the surgeons who were members of the guild lived peaceably together. The surgeons had probably improved themselves greatly by their contacts with foreign surgeons during the wars.

The matter of social standing was of the greatest importance. The order of precedence in various processions such as the coronation was a matter of moment. In 1532 it was ordained that the barber surgeons should be ranked 18th in processions. Two years later it was ordered that the barber surgeons should no more go in processions, and the barbers were moved to 17th, immediately before the cutlers.

About 1210 the College de St. Come was founded in Paris and it made a distinction between the surgeons of the long robe and the barbers, or the surgeons of the short robe. Castiglioni[5] says there were forty barber surgeons in Paris in 1365. "The Statutes of the Communaute des Barbiers date from 1361 and were confirmed by an ordinance of 1383, according to which "the king's first barber and valet controls the trade of the barbers of the city of Paris" and was also "head of the barbers and surgeons of the kingdom." In 1372 an ordinance of Charles V permitted the barbers the treatment of various surgical diseases, boils, lumps, and open wounds, if the wounds are not fatal. In 1505 the College de St. Come established a course for the barbers but the lectures were given in Latin and were not well attended.

Meanwhile in Italy a Statute established by Florence in 1349 regulated all who practiced healing whether giving prescriptions in writing or without writing and an amendment of 1374 states specificially:

> "All barbers and every one of them of those who practise the trade of barbers should be called, regarded as, and accepted as physicians, should take the oath, and should submit to the said art and to the consuls of said art."

The petty jealousies and competitive hatreds between physicians were especially prominent in England and France. Toward the end of the fourteenth century Pope Honorius III had forbidden priests to practice medicine as it was not in accord with their character. According to Riesman,[6] Jean Despois in 1395 was denied a license because he had married but was admitted after he became a widower. Another physician was deprived of all his titles in 1443 for "not only had he espoused a wife but a widow." In 1452 celibacy was abolished by the Cardinal as "unreasonable and impious in a doctor." Medical students, however, if they were married, were not admitted to licensure before 1600.

In the early days of the University of Paris medicine did not include surgery because surgery was forbidden to clerics. While this concept prevailed in Paris, Oxford and Cambridge, it did not apply in Bologna, Padua, and elsewhere in Italy, nor in Montpellier where Guy de Cahuliac taught the surgical art. In Paris the teaching of anatomy was delegated by the professor to a surgeon barber, for anatomy was only a "manual exercise and commanded no respect."

When Italian surgeons came to Paris quarrels began and these caused Jean Pitard to organize the teaching of surgery and to organize the previously mentioned Confrerie du Saint Come. The physicians had St. Luke and perhaps a hundred minor saints as patrons, the surgeons had only Saint Cosmas and St. Damian. When it became necessary to bleed the King, the first physician held the torch, the first surgeon performed the operation and the first apothecary held the basin. The surgeons were involved in constant quarrels with the barbitonsores. The medical faculty spited the surgeons by favoring the barbers whenever possible. Finally in 1423 the surgeons secured a decree from the Provost of Paris prohibiting the barbers from exercising any of the functions of the surgeon.

Early German surgery began with a Bavarian army surgeon, von Pfolspeundt, whose work written in 1460 remained for many years, like that of John Arderne, simply in manuscript form. As a consequence of the great setback of the 30 years war, general surgery was practiced mainly by the executioner and the barber and the itinerant bonesetter. Among the duties of the army surgeon was shaving of the officers. Hence army surgeons were called "feldscherer" which was contracted to "feldscher," a lower class of army surgeons revived in some countries in World War II.

For some hundreds of years the barbers and barber surgeons dominated the British surgical scene. A Guild of Barber Surgeons was formed in the city of York.[7] The entry of the first barber was in 1299. In the next 50 years, 17 barbers were admitted. A note dated 1346 records payments to two barber surgeons for extracting arrows and healing a citizen. Ordinances were developed for the barber surgeons, one of them requiring that they do not follow their craft on the Lord's day on pain of excommunication.

In 1555 the London Corporation of Barber Surgeons resolved to nominate two of their members to give instruction in anatomy. In 1614 the Company of Surgeons of York resolved to choose one to be a master in anatomy.

Every surgeon in York was compelled to join the company or to be expelled from the city. The penalty of 40 shillings was set up compelling every man or woman in the city to consult a licensed surgeon before consulting any unlicensed practitioner.

In Newcastle-on-Tyne[8] an ordinance relating to the barber was dated 1442. In 1648 they petitioned for a site to erect a meeting house and to plant a garden in which to grow medicinal herbs. By 1652 meetings were regularly held in the Barber Surgeons Hall.

A visitor named Celia Fiennes in a book called "Through England on a Side-Saddle" describes it as it was in the ti [illegible] William
and Mary, 1689-94. There [illegible]
with a round [illegible] in it raised [illegible]
seats or be [illegible] conv[illegible]
dissecting [illegible] a
reading lectu[illegible] The

John Banester delivering the Visceral Lecture at the Barber-Surgeons' Hall, London, in 1581.

two bodies that had been anatomized, also the skin of one body dried and stuffed."

There is a record of a dinner given Oct. 28, 1478, in the reign of Edward IV and the account books show the activities. For instance one item, May 23, 1692, "disburst about ye amount that was given the company for dissection 10 shillings, 9 pence, for mending the table and coffin, and drinks and bread 13 shillings, 8 pence."

The guild was given the bodies of persons who were executed. The organization prosecuted surgeons considered unqualified. The barber surgeons combined their calling with that of the tallow chandlers and in 1777 periwig making was added. Surgical instruments, which were loaned out on occasion, were kept in a glass-front cupboard, and were loaned only for major operations.

In 1504-05 the barbers of Edinburgh[9] were more numerous and more influential than the surgeons. The barbers were first to specialize in surgery. The Corporation of Surgeons and Barbers was given a charter in Edinburgh in 1505. In 1648 the surgeons passed an act that "no barber should be admitted any time coming except he be tried and found qualified for the practice of chirurgie." Ten years later the apothecaries were affiliated to the surgeons. From this point on the surgeons neglected the barber craft.

The Barbers and Surgeons united in 1540. Among the predecessors of the Royal College of Surgeons, established in 1800, were the Barbers' Guild, the Fraternity of Surgeons, the Barbers' Company, the United Company of Barbers and Surgeons, and the Surgeons' Company. The United Company of Barbers and Surgeons had a good library. A bill for taking care of the books during 1638 and 1639 showed that the books were well bound and fastened by clasps to an iron chain so that they could not be removed. Eventually the properties of the predecessors passed to the Royal College of Surgeons although most of the books seem to have been lost. When the Royal College of Surgeons was established it had at first a governing body which included the Master, the Wardens and the Court of Assistants. These titles had been evolved from the earlier groups. In 1308 there were only Masters. In 1416 the Guild of Barbers had Masters and Wardens. The titles had been inherited from the Surgeons' Company which in turn took them from the United Company of Barbers and Surgeons and they took them from the Barbers' Company established in 1462. The paraphernalia of office coming down from the past included the Mace and the three-cornered hat. The mace is still symbolic and one was sent by the Royal College of Surgeons to the American College of Surgeons and was carried in the procession of that august body when it was organized in 1913.

In 1529 Ambroise Paré came from the provinces to Paris. He was at that time a rural barber's apprentice. His father was a valet and barber, his brother-in-law, Gaspard Martin, a master barber-surgeon in Paris. Soon after coming to Paris he obtained the position of resident in the largest hospital in Paris, the Hotel Dieu. He was then 19 years old. Sometime later he wrote:

> "I was resident the space of three years in the hospital of Paris, where I had the means to see and learn diverse works of chirurgery, upon divers diseases, together with the anatomy, upon a great number of dead bodies, as oftentimes I have sufficiently made trial publicly in the physicians' school at Paris, and my good luck hath made me see much more."

The French surgeon owed improvements in his social condition to the fistula of Louis XIV and its successful treatment by Felix. Felix and his successor Mareschal were made royal surgeons. In 1724 Mareschal obtained from Louis XV the creation of five chairs of surgical instruction at St. Come. The Paris medical faculty revolted, marched in procession to St. Come and harangued against the surgeons. The mass of the people sided with the surgeons. Then in 1731 the Academy of Surgery was founded and in 1743 Louis XV promulgated an ordinance which delivered the surgeons from further association with the barbers and wig makers, who were forbidden to practice. The ordinance further declared that no one could be a master in surgery without being a master of the arts. The Academy of Surgery was abolished in 1792 during the French Revolution. In 1794 a new edict broke down any distinction between physicians and surgeons as separate guilds and practice was thrown open to everybody who could pay for a license. In 1803 examinations and diplomas were revived and a controlled scientific profession was on its way to its present dignified state.

In England separation of the surgeons from the barbers occurred in 1745. The surgeons were elected as masters, governors and the Commonality of the Arts and Science of Surgeons of London. The surgeons left to the barbers the hall, the library, and the silver.

Properly at this point comes a reference to the place of anatomy in the apprenticeship served by the young men who became surgeons. In 1540 the guild of surgeons which had always taught its members and apprentices by lectures got an act providing them with bodies for dissection:

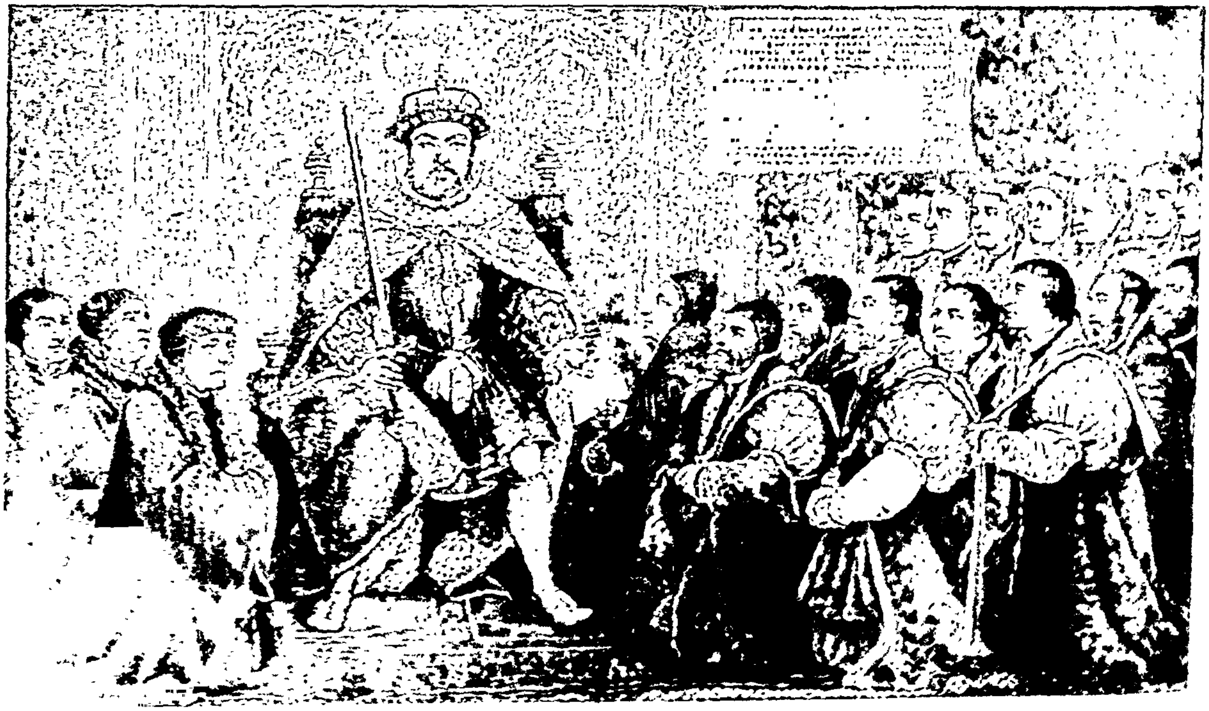
> That the sayd *maysters or gouernour'* of the mistery and comminaltie of barbours and surgeons of London, and their successours yerely for euer after their said
> crecions at their [illegible] e and plea
> shal and maie [illegible] out
> traction foure [illegible] i

> and put to deathe for feloni by the due order of the hynges lawe of thys realme for anatomies without any further sute or labour to be made to the kings hyghnes his heyres or successours for the same. And to make incision of the same dead bodies or otherwyse to order the same after their said discrecions at their pleasures for their further and better knowlage instruction insight learnyng and experience in the sayd scyence or facultie of surgery.

Anatomical teaching was long kept in the hands of the Barbers and Surgeons Company as a strict monopoly. Two classes of anatomical dissection developed. The public dissections of the four bodies attracted swarms of visitors. Private dissections took place for pupils who paid for their tuition. Distinguished visitors who attended the public dissection were invited to a banquet which followed. Here is the description given by Pepys in his famous diary, on February 27, 1663:

> Up and to my office, whither several persons came to me about office business. About 11 o'clock, Commissioner Pett and I walked to Chyrurgeon's Hall (we being all invited thither, and promised to dine there); where we were led into the Theatre; and by and by comes the reader, Dr. Tearne, with the Master and Company, in a very handsome manner: and all being settled, he begun his lecture this being the second upon the kidneys, ureters, &c., which was very fine; and his discourse being ended, we walked into the Hall, and there being a great store of company, we had a fine dinner and good learned company, many Doctors of Physique, and we used with extraordinary great respect. Among other observables we drank the King's health out of a gilt cup given by King Henry VIII to this Company, with bells hanging at it, which every man is to ring by making after he hath drunk up the whole cup. There is also a very excellent piece of the King, done by Holbein, stands up in the Hall, with the officers of the Company kneeling to him to receive their charter.

In this famous picture the King is presenting the Charter to Dr. Thomas Vicary. The barbers gave 150 guineas to the artist to engrave the picture. Dr. Charles Greene



Henry VIII presenting a charter to the barber-surgeons of London. (From the painting by Holbein.)

Cumston[10] wrote the history of this picture in 1912. Apparently it was planned and partly painted by Holbein but finished by another artist. The picture is still in the possession of the Company. It was injured in the great fire of London and Pepys thought at one time of buying it.

An excellent picture of the evolution of the teaching of anatomy in Great Britain through the time of William and John Hunter is provided in the first chapter of George C. Peachy's *Memoir of William and John Hunter*.[11]

In 1790 the Company of Surgeons got its own habitation. Then in 1800 the Corporation of Surgeons was rechartered by George III as the present Royal College of Surgeons of England. In 1784 the College of Surgeons of Ireland was founded. The development of surgery in Germany was slow. Frederick the Great sent medical cadets to Paris to complete their education and in 1743 engaged 12 French surgeons to look after his troops. The Prussian army surgeon of that day was ranked above a drummer and beneath the chaplain. In 1785 the Colegium Medico-Chirurgicum was converted into a medical surgical society which was devoted exclusively to the education of army surgeons, and this later became the Friedrich Wilhelm Institute.

The Profession of Surgeon

In the United States of 1957 the surgeons are most organized of all the branches of the medical profession. When a few surgeons get together for improving their education, their technical skill, their learning or teaching, their travel or their investments, they form a society. In the Great Britain, France, Germany, or Italy of the years 1300 to 1800, society itself was being organized for the protection of the workers in trades or professions. There were few organizations of the people themselves to protect themselves against social changes. The physicians, as Sir D'Arcy Power pointed out, were generally ecclesiastics who studied books and taught theory; the apothecaries were offshoots of the grocers who made and sold remedies and were not averse to prescribing; the family doctors were usually just people who had learned about herbs and plant remedies. Ignorant pretenders to knowledge and skill traveled about couching for cataract, treating ruptures, cutting for stone, setting bones, pulling teeth, and shouting their virtues. The barbers were first impressed into caring for the tonsures in the monasteries; then into the letting of blood, and gradually as they picked up information and skill, into other medical and surgical procedures. As the universities were formed men trained in general knowledge as masters of art began studying anatomy and became masters of surgery. As society became more complex, it became apparent that distinctions would have to be made. To the guilds of the tradesmen were added the guilds of the barbers and the guilds of the surgeons with authority conferred by government, distinctive costumes, rights and privileges and with these responsibilities. Because both knowledge and skill were primitive and the results of surgery often doubtful, the surgeon was careful to get his fee before operating; operations were done in the patient's home and the surgeon lived in the patient's home until the patient was cured. Sometimes he would look at the wound and then in the still hours of the night silently ride away. Out of such situations a series of principles or practices or a sort of code of ethics began to form and was written down by the leaders to guide the group. One such leader wrote:

> A wise surgeon will refrain from stealing anything while he is actually attending a patient.
>
> He should be careful not to employ notoriously bad characters as his assistants, for these things may spoil

> tion and thus detract from the dignity of medicine.
>
> A surgeon should not talk to the women of the house with closed doors, whether she be mistress or servant; he should never speak improperly to her nor make eyes at her, especially in the presence of the patient. Such actions may cause a patient to lose confidence in his surgeon, and thus the operation may prove unsuccessful, because the patient has lost the good opinion he had of the surgeon.
>
> The rich have a nasty habit of coming to the surgeon in old clothes, or, if they are properly dressed, as befits their station, they invent all kinds of excuses for beating down his fees. They say charity is a flower and think that a surgeon ought to help the unfortunate, but they never consider that a like rule is binding upon themselves. I often say to such folk, "well, then, pay me for yourself and for three paupers and I will cure them as well as you."

The development of anatomy and other sciences placed even greater responsibilities on the surgeons. Two great steps toward the advancement of surgical standards were the improvement in the education of apprentices and the examinations required before admitting to become masters. Next were the controls established by the guilds with the masters or wardens.

For many years anatomy was the basis of training for surgery and in many schools the professorships of anatomy and surgery were combined. Then came pathology with a new burden for the surgeon and a guide to operative procedures. And now with bacteriology and biochemistry helping to make the decisions the surgeon must be indeed a learned man.

The five hundred years from 1300 to 1800 proved the value of surgical organizations in the encouragement of education, the control of ignorant and unethical practices, the dissemination of knowledge and the protection of the public. The battles of those five hundred years between physicians and surgeons to establish their status served a useful purpose. Ultimately they came to work together; the physicians learned to recognize the skill of the surgeons; the surgeons learned that they

The dissecting room. The figure standing above the rest is William Hunter. His brother John is at his right. (After Rowlandson.)

must be themselves physicians with a training above that of physicians generally. The problems of greed, *ignorance*, quackery, and inhumanity which troubled the master surgeons and the guilds still remain, and if they are ever to be solved by social controls, the surgical organizations will have to solve them.

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Simplicity in Medical Writing

THERE has always been a need for the concise and simply written medical paper. This, however, is not as simple as it seems, because the moment the physician puts pen to paper he is no longer the plain-spoken, kindly practitioner of the art of medicine, but an entirely different person. He becomes ultrascientific and on occasion may find himself in a miasmic labyrinth of gobbledygook. Chesterton's advice—"To write simply is the essence of good English"—is easily forgotten.

It is not necessary to begin with the statement that the subject is interesting. It is up to the writer to prove that. It is best to begin with a brief statement as to what it is all about, and then get on with the subject matter.

Historical asides should be brief and not put in the introduction. Several paragraphs farther on, if the reader is tiring, a well written, compact bit of history may stimulate his interest.

The observation that the scientific knowledge of the ancients was obscure has no place. Everyone knows that, and no apology need be made for men of bygone ages, who in some respects were better observers than the physicians of today. They possessed the virtue of presenting their thoughts briefly and clearly.

Bibliographic [illegible] always dreary furniture. It [illegible] the number to a minimum.

The conclusion should bring into focus all that has gone before. It is a recapitulation and should paint an unforgettable word picture. If this is done, the author may be reasonably certain that the reader will then start at the beginning and read the entire article. No greater compliment could be paid any man.

During the past few years something macabre has been adopted by the dilettante lay journals and by some strange mystery is now found in medical journals noted for their purity and austerity. It is the strange symbol "and/or." Here is the greatest cerebral roadblock ever contrived, and at this point the brain reels and the article makes quick passage to the limbo of forgotten things.

Has supplied all writers with a terse reminder that medical authors might well heed:

Walter Savage Landor
Never used *and/or.*

In the New York *Times,* Jacques Barzun writes that Sir Ernest Gowers is a retired British Civil servant whose father, as a young physician, discovered the knee jerk. The son grew up to hear this called the patellar reflex. He was a lifelong official of the treasury, and he witnessed many more changes of the familiar into the unspeakable. In 1948, Gowers wrote by request a small book called Plain Words. Three years later he added a glossary, *The A B C of Plain Words,* and today it is a best seller. His name now is a common verb. To "Gowerize" in England means to translate the vulgar "patellar reflex" into the simple, aristocratic elegance of "knee jerk."

Gowers' crusade should be heeded by all. If ever there came a time for reform it is now. Instead of adding new variations to medical and surgical jargon, we should get down on our knees and start weeding. For example, 12,000 new terms have been added to the new Gould Medical Dictionary.

In addition to the new terms, 8,000 old ones have been rewritten. The physician is bewildered and bedeviled by all this and is beginning to wonder at just what point he will lose contact with the English language and find it necessary to employ an interpreter to keep in touch with his patients.

The overuse of certain words seems to run in cycles. A few years ago the word "evaluate" was found in every other paragraph. At medical meetings, if the speaker was positive and powerful of voice, it sounded like Gabriel's last trump. The two-syllabled "assess," more direct and euphonic, was forgotten. "Reversible" and "irreversible" are now getting quite a play in medical writing and discussions.

The chief current horror at the moment, however, is the substitution of "mitigate" for "militate." Like all other such assaults upon the language, this is spreading like a forest fire. "The employment of this type of surgical procedure mitigates against early recovery," says the author innocently, having heard the expression at the latest scientific meeting he has attended, and hundreds of others instantly pick it up.

Another linguistic microbe that has got in somehow and seems likely to cause an equal epidemic: the use of "amendable" for "amenable." In the first place this was probably an error made by the author's typist and overlooked by him; but no matter, it is as violently contagious as chickenpox or pinkeye. True, these diseases are not confined to medical publications; only a few days ago a report in one of our major magazines came out with the statement that several hundred acres of farm land in the South had been *liquidated* by the recent floods. This, however, does not excuse the continuous and increasing incidence of such symptoms among those whose task it is to heal diseases, not spread them.

Every passing year sees at least fifty of these misbegotten words and phrases, the parvenus of language, usurp the places of their betters. Meanwhile, the old gatecrashers are still with us: redundancy (*red in color, square in shape, soft in consistency, pathologic in nature*) : misdefinition (*pathology* for *lesion* or *disease, surgery* for *operation, case* for *patient*) ("this case was tightly bandaged and early next morning gave birth to a healthy child") ; grammatical torts and malfeasances (a contrast media, this data, one criteria) ; hamstrung syntax ("cerebral palsied cleft palate and harelip patients") ; verbosity—or, if the verbose prefer, logorrhea ("the pathological findings present were associated with an additional pathology indicating the presence of a possible postmeningitic syndrome in addition to the original pathology") and, finally, the never-failing floodtides of professional jargon, a sort of mental shorthand that defeats the very purpose it was invented to fulfill. "I operated this patient under general anesthesia" appears in at least six of every ten manuscripts received by the editor of any surgical journal. According to Webster, the verb "operate," used without "upon," whether applied to a patient, a machine or a corporation, means to conduct, to carry on, to cause to run. It follows, therefore, that only God can operate a man. Furthermore, if the surgeon actually did operate under general anesthesia, as his diction and punctuation suggest, Heaven help the patient! One surgeon, according to a recently published handbook (*The Physician-Writer's Book*, by Richard M. Hewitt) claims to have gone still farther; he performed the operation in the knee-chest position. This is what the *New Yorker* would call the neatest trick of the week.

One might reasonably suppose—there is plenty of evidence—that straightforwardness and simplicity in medical writing had been officially banned. Who, then, imposed the ban? Not the editors, certainly, who labor daily against these assaults on the language. Not the reader, just as certainly; faced with those massed batteries of polysyllables, he confines himself more and more to the reading of abstracts. Even here he is in danger, for the abstractor too often is bitten by that coldest of monsters, the meaningless jargon which the style of the moment apparently accepts as a scientific ideal.

One of the best pieces of prose in English is Hilaire Belloc's *The Mowing of a Field*. If the young doctor were to keep this at his side, he would catch the rhythm, flow and beauty of words and would find it a great help in making his medical writing sparkle with meaning and clarity.

If such a ban exists, then, it is self-imposed by the authors, and only they can remove it. Is it going too far to suggest that even they might find its removal a relief?

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New Books

Books Received.—The following books have been received by the Editor; they will be reviewed critically as space and facilities permit. Omission of more extended review, however, is not to be taken as criticism of the merit of the book.

L'Hemispherectomie (Hemispherectomy). By E. Laine and C. Gros. Paris: Masson et Cie, 1956. Pp. 134, with 31 illustrations.

Handbook of Physical Therapy. By Robert Shestack. New York: Springer Publishing Company, Inc., 1956. Pp. 212.

Atlas of Tumors of the Nervous System. By H. M. Zimmerman, Martin G. Netsky and Leo M. Davidoff. Philadelphia: Lea & Febiger, 1956. Pp. 191, with 277 illustrations (233 in color).

How to Enjoy Good Health. Edited by Cyril Solomon and Brooks Roberts. New York: Random House, 1956. Pp. 240.

Head Injuries and Their Management. By Francis Asbury Echlin. Philadelphia: The J. B. Lippincott Company, 1956. Pp. 127, with 10 illustrations.

Clinical Urology. By Oswald Swinney Lowsley and Thomas J. Kirwin. Baltimore: The Williams and Wilkins Company, 1956. 2 volumes, profusely illustrated; drawings by William Didusch.

The Stress of Life. By Hans Selye. New York: McGraw-Hill Book Company, Inc., 1956. Book V. Pp. 324.

The Management of Fractures, Dislocations and Sprains. By John Albert Key and H. Earle Conwell. St. Louis: The C. V. Mosby Company, 1956. 6th ed., pp. 1,168, with 1,123 illustrations.

Lymphatics, Lymph and Lymphoid Tissue. By Joseph Mendel Yoffey and Frederick Colin Courtice. Cambridge, Mass.: Harvard University Press (for the Commonwealth Fund), 1956. Pp. 510. Illustrated.

Operative Surgery. Edited by Charles Rob and Rodney Smith. London: Butterworth & Co., Ltd.; Philadelphia, F. A. Davis Co., 1956. Vols. 1 and 2 of 8 (plus index). Profusely illustrated.

Brain Mechanisms and Drug Action. By William S. Fields, Springfield, Ill.; Charles C Thomas, Publisher, 1957. Pp. 167, with 69 illustrations.

The Clinical Management of Varicose Veins. By David W. Barrow. New York: Paul B. Hoeber Inc., 1957. Pp. 167, with 70 illustrations.

Le Diagnostic du Cancer d'Estomac a la Periode Utile (Diagnosis of Carcinoma of the Stomach at the Time Most Favorable for Treatment). By Rene A. Gutmann. Paris: G. Doin et Cie, 1956. Pp. 257.

Le Traitement Chirurgical des Hernies de l'Aine chez l'Adulte (The Surgical Treatment of Inguinal Hernia in the Adult). By Henri Fruchaud. Paris: G. Doin et Cie, 1956. Pp. 386, with 210 illustrations.

Prof. Fruchaud points out that the Bassini operation, including its various modifications, is followed by recurrence in 2 per cent of cases of indirect inguinal hernia and 14 per cent of cases of direct inguinal hernia. The percentage of recurrence is highest in patients over 25 years of age (10-15 per cent from 25 to 35 and 30 to 40 per cent after 45).

The book is divided into five parts. Part 1 is a *critique of the Bassini operation* and its numerous modifications (Zimmerman, Andrews, Berger-Halsted). The author states that hernias cause distortion of the deeper structures of the inguinal canal. He points out that current operations limited to repair of the inguinal canal and rings, and even corrective operations, are insufficient. He describes the technic he has devised for total reconstruction of the inguinal region.

Part 2 is devoted to troublesome complications of herniotomy: (1) infection of the wound, which delays healing, favors recurrence of hernia and results in an ugly scar, and which can be prevented by rigid asepsis and careful handling of tissues, and (2) cellulitis and phlebitis resulting in testicular infarct and embolus formation. These can be prevented by careful dissection without trauma to the deeper vessels and resection of the sac without removal of the part adherent to the cord. Operative repair should be performed so as to assure sound healing.

Part 3 describes the technic of the author's operations designated as 1 and 2. The first two stages are the same for the two procedures and consist of: (1) adequate exposure of the inguinal region and (2) careful dissection, mobilization of the cord and correction of the peritoneal defect. The third stage consists of reconstruction of the abdominal wall with two rows of sutures—one superficial and one deep—below the cord, uniting Cooper's ligament and the deep transversalis and external oblique fascia and thus obliterating Hesselback's triangle. In some instances it is difficult to utilize the transversalis fascia because of its insufficient length. This defect is overcome by inserting a layer of nylon mesh and suturing its inferior border to Cooper's ligament, thereby reinforcing the transversalis fascia. Nonabsorbable sutures are employed throughout, i.e., silk, linen, cotton or stainless wire.

Part 4 deals with operations designated as 3 and 4, devised for simplified reconstruction of the inguinal canal in debilitated old men, and women, and by the technic used for repair of femoral hernia.

Part 5 is a correlation of the author's results after operations 1 and 2. There have been no recurrences in 200 herniotomies, 30 of which were performed as long as four years ago. One-third of the patients were between the ages of 40 and 75 years; 35 presented recurrent hernias; 11 had massive hernias adherent to the large intestine. The author attributes success to his technic, which obliterates the offending funnel-shaped peritoneal depression, thus reinforcing the lower abdominal wall. The repaired peritoneum forms a solid resistant plane that does not bulge upon coughing and prevents the recurrence of hernia.

The book is, in short, a full presentation of the author's perfected technics for herniotomy. It has 210 illustrations by Arnold Moreau and an extensive bibliography of over 500 references. Surgeons interested in herniotomy will find much helpful information in this volume.

CHARLES PIERRE MATHÉ, M.D.

Synopsis of Gastroenterology. By R. Schindler. New York and London: Grune and Stratton, 1957. Pp. 395.

The *Synopsis of Gastroenterology* was written specifically for the general practitioner and the internist. The intern and resident will also find much of practical value in it using as an example the mesenchymal diseases and their treatment with hyaluronidase and adrenal cortex hormone. A definite clarification of the relation between the action and the guiding of hormones will result in successful therapy. Investigation of the hormonal processes with regard to the development of the bones has produced completely new points of view. In this way, Matthiasch (M 410) tried to account for the developing of scoliosis, kyphosis in adolescents and epiphyseal changes. Also dystrophia osteogenesis (acromicria), on which Lindemann (M 116) reports, must be regarded as connected with hormonal disorders.

The study of prenatal pathology likewise gives valuable hints. Thalhammer (P) showed that prenatal damages occurring at different times have different results. On the other hand, heterogeneous damages occurring at the same time have identical results.

Before discussing the disease of the different body segments, I should like to emphasize some special topics.

Angiographic study is valuable in diagnosis and therapy of bone tumors as well as of their differentiation from inflammations (Vogler and Deu, O 158). One has always to take into account malignant degeneration in cases of giant cell tumors (Krauspe, S 124; Werne, C. 346; Contzen, B 385). Consequently, there has to be a radical operation (Kindler, C 7), the defect to be filled in with bone spans or chips. Gschnitzer and de Gennaro (M 1), on the strength of their studies, believe that osteidosteoma (Jaffe-Lichtenstein) is a "circumscribed bone forming osteomyelitis or osteitis," but not a tumor. The origin of *central fibrosarcoma* is still a matter of controversy (Gschnitzer and Minervini, M 76).

A main topic at a recent meeting of orthopedists was *ostitis deformans Paget*, the cause and early symptoms of which are still unknown. Halshofer (P 77) observed diminished bone volume with well-defined borders in fresh foci, as Weiss (P 77) had shown them roentgenographically. Areas deficient in calcium make their appearance. Erroneously, they are called osteoporosis circumscripta. The classic mosaic structure is said to be associated also with other diseases. If one studies the changes in the vessels in the pre-Paget stage, one is surprised at the dilatation and increase of the venous sinuses, the arterioles not being affected (Ruthishauser and Veyrat, F 86). Susse (O 498), who observed enossal congestions in angiographic investigation. Upon treatment, Koch (P 320) obtained good results by use of thorium-X, a radioactive calcium preparation (tracer).

The *Sudeck syndrome* has been discussed in many investigations. For early diagnosis they emphasized, in addition to the clinical picture outlined by Bierling and Reischel (O 1), bandlike translucent spots in the metaphysis, and later subchondral translucences appeared in the roentgenograms. Bierling and Reischel recommended roentgen therapy of the sympathicus, in combination with methylandrostendiol. The occurrence of the Sudeck syndrome as a disturbance provoked at a distance in cases of tumor, contusion of the cervical portion of the spine or disease of the vertebral column, was observed by Kirsch (M 95) 13 times in 176 cases. Schlomka and Opitz (C 55) observed the Sudeck syndrome in a case of arsenic polyneuritis. Homann (F 280) denied that the Sudeck syndrome, as a consequence of treatment, could possibly be avoided. Gejsthövel and Busch (J 178) and others interpreted this syndrome as a vegetative conditioned reflex, a trophic disorder caused by a peripheral stimulus. They recommended, therefore, elimination of the stimulus and stimulation of blood circulation and of the vegetative system.

In order to depress the vegetative nervous system, Götze (K 49) has successfully used phenothiazine derivates (megaphen and atosil). Scholz and Leytner (R 1) favored treatment by short waves and brine baths in combination with vasodilator remedies. Arnold (N 7) advocated ultrasonic treatment, and Beckmann (C 57) recommended vitamin E and D therapy to stimulate the circulation and to "normalize" the calcium phosphate level.

Treatment of *tuberculosis of the bone* has made remarkable progress during recent years. Early diagnosis is the prerequisite to successful treatment. Rauch (F 318), and Weil and Fründ (C 49), emphasized, therefore, the value of biopsy, which in 90 per cent of the cases sheds light on the question.

The particular course of osseous tuberculosis and its resistance to therapy in prisoners of war who were sent home only after many years of captivity and who were suffering from severe intestinal dystrophy is, according to Glogowski (K 11), due not so much to a protein deficiency as to both a vitamin deficiency and the development of a pathologic intestinal flora. This accounts for the fact that chemotherapy has been successful only when combined with large doses of vitamins.

Also, in cases of simultaneously existing pulmonary tuberculosis, modern antibiotics make possible a successful operation on the foci of bone tuberculosis (Daubenspeck and Jentgens, M 1).

Tuberculous spondylitis is often difficult to differentiate from tumors (Bette, M 232). This difficulty can be cleared up, however, by exact reading of the roentgen picture in combination with hematologic examinations, electrophoresis and sternal puncture.

Spondylitis anterior superficialis may be present in paravertebral abscess formations as well as in progressive infiltrative inflammation (osteoperiostitis tuberculosa). Crossing of the lumbodorsal edges is possible from above or below. Relapse of a superficial focus is to be explained as a warning sign of reduced resistance (Jentschura, M 248).

Surgical clearance of vertebral foci, when combined with chemotherapeutic rinsings, according to Kastert and Orell, indicates great progress and is suggested for all circumscribed processes (Rathcke, M 29, and Schulze, C 79). In order to obtain sufficient concentration on the foci in old processes not suitable for operation, Rossler (F 1246) inserts a permanent cannula and washes out the focus with tuberculostatics in combination with fibrinolytic ferments and hyaluronidase for simultaneous removal of the necrotic masses.

Weil and Fründ (C 49) treat *coxitis tuberculosa* with ischiofemoral arthrodesis according to Brittain. In cases of large foci they prefer the clearance of the foci combined with spongiosa plugging. Lerach (M 7) also obtained good results by this method when employed for the upper extremity.

Lentz (q.v.) presented a survey of the application of autoplastic, homeoplastic and heteroplastic *bone transplants*, according to his own experimental and clinical observations, evaluating them in that sequence. Deep refrigeration he deemed superior to other conservative methods. (For further papers on the use of spans, see the section on traumatic surgery.)

A paper by Hackenbroch and Rutt (H 1539) dealt with conditions due to *poliomyelitis*. For gluteal paralysis, they recommended subtrochanteric osteotomy. They emphasized the importance of operative stabilization in cases of paralytic scoliosis.

For the so-called *habitual shoulder luxation*, Russe (R 128) recommended the Bankert method.

Baumgart (A 1115) uses a modified form of the Finsterer surgical technic according to Schutze. The pars clavicularis of the pectoralis muscle is carried out below the head of the upper part of the arm and is fixed at the posterosuperior part of the acetabular cavity. In his opinion the Bankert operation is far more difficult and sometimes results in relapse.

Bohler and Aichner (R 117), Grewe (A 1210) and others reported good results from the local application of hydrocortisone. Moreja (M 58) advocates adherence to the Hohman operation because, in his opinion, the cause of the ailment lies in a changed cubital angle.

Witt (C 488) recommended, for the treatment of clinical supracondylar fracture of the humerus, fixation by Kirschner wire as frequently done at the M. Lange School. The great advantages are an ideal reposition, minimal operative intervention, the possibility of early mobilization, and the avoidance of disturbances of growth. Bohler (R 242) recommended the crossing of the drilled wires. If the wires have to be drilled through the epiphysis, they may cause a disturbance of growth if they remain in situ too long. In this event it will be a question not only of blocking but of damage to the epiphyseal cartilage (Duben and Gelbke, M 108). For this reason, early removal of wires is mandatory (see also Witt, C 488).

On the strength of their histologic studies, Schneider and Gschnitzer (M 386) concluded that the so-called *styloiditis radii* is a tendopathy of the brachioradialis muscle, due to over strain. Ravelli (M 70) maintained that the circular translucencies often observed in the carpal bones, which may cause diagnostic difficulties, are to be explained as vessel canals.

Bohler (H 1731) and Witt (L 561) surveyed the treatment of *manual injuries.* In cases of oblique fracture of the phalanges they reported the successful use of drill wires, which they have also used effectively for Bennet fractures.

In cases of injuries of the tendon flexors, primary suture with fixation of the proximal edge of tendon is preferred, as is secondary suture according to Bunnel.

For the treatment of *navicular fracture,* Nenninger (L 905) recommends the use of plaster of paris according to Rehbein, applying it to all the fingers as far as the nail groove. Trojan and Jahn (R 99) observed that old navicular fractures, in cases in which the roentgenogram still shows a regenerative process were cured in 95 per cent of the cases, provided fixation was maintained long enough.

In cases of *Dupuytren's fracture,* conservative treatment with hydrocortisone, hyaluronidase and fibrolysin is successful only in the early stages, according to Gohrbandt (G 572).

Weil (M 204) reported on his active Heidelberg arm prosthesis. It is put into operation by means of gas pressure leading into pressure bellows and acts by exerting force on the shoulder or arm stump. Five movements are possible, i.e., flexion and extension of the elbow, supination and pronation of the forearm and closing of thumb. Of 15 armless patients, 13 were able to resume their occupations.

Vertebral Column.—Zukschwerdt and his coworkers reported an excellent survey of pathologic changes in the *spinal joints* and *discs.* The report is based upon the vast material available to them for observation, and their own anatomopathologic investigations. Their critical attitude toward the difficult subject of chiropractic should be emphasized. Conditions alien to the spine, as the chiropodists understand them, cannot be influenced by spinal manipulation or organic disease located at a distance from the spine. Manual redressing done by an experienced physician may give good results in cases of spinal joint blocking. Sandberg's book took the opposite point of view. Without shedding light on his opinion, or giving proof of it, he conceded great possibilities to chiropractics. Cramer and Peper covered their chiropractic technic in their respective books.

As to the origin of *congenital fissures or defects in the vertebral bodies,* Rathke (M 118), elaborating on ideas put forth by *Putti* and *Diethelm,* developed an interesting theory supported by roentgen and anatomopathologic research: that, owing to a developmental disorder in the chordadorsalis, a sagittal or frontal perichordal septum consisting of disc-like tissue develops. Interfering with normal ossification, it may cause a partial frontal and sagittal fissure or result in the forming of a ¼ or ¾ vertebra.

Reisshauer and his coworkers struck a balance of the clinicians' views on the *cervical vertebral syndrome.* Janzen and Zulch discussed the clinical and neurologic aspects, Tonnis and Trenkel the operations. They pleaded for operative treatment of medial and lateral prolapse, provided conservative therapy has failed and when muscular atrophies or disorders of sensibility exist. In addition to psychologic guidance, the conservative treatment (Reischauer) includes procaine block and extension technics. In that context, chiropractic is evaluated (Zukschwerdt).

Brocher published a paper of fundamental value dealing with the *occipitocervical region.* In addition to his excellent representation of the anatomic and roentgenologic aspects, with special appraisal of function, he explained the congenital disorders. His is a clear and unequivocal position with regard to luxation and subluxation of the upper part of the vertebral column in the sense of chiropractic, which, he observed, "often is afflicted with hypotheses or even with mysticism."

According to the experience of Hoff (R 227) a valuable help in the treatment of fractures of the cervical vertebrae, particularly the first and second, is the *Crutchfield clamp.* The extension weight must be varied according to the fracture level (between 2.25 Kg.

am 1. HWK and 15 Kg. am 7. HWK).

The application remains unsuccessful if there has been immediate flaccid paralysis, or if there is priapism, which, among other symptoms, - indicates total severing of the cerebral portion of the spinal cord. The method has also proved successful with pathologic luxation of the atlas and, exceptionally, with compression of the vertebral portion of the spinal cord associated with severe scoliosis, with fractures of the lumbar portion of the spine and with spondylitis tuberculosa, particularly when employed in preparation for surgical intervention.

Lindemann (M 540) expressed the' opinion that *juvenile kyphosis* is associated with a developmental disturbance in the chorda and therefore, with dysostosis enchodralis. After extensive roentgenologic and histologic investigations, Reske (M 489) attributed an essential significance to the paravertebral tissue shadow in the development of scoliosis. That shadowy outline, in his opinion, is caused by inflammatory and reactive changes in the retro-aortal subpleural connective or adipose tissue in connection with the pleura, and represents an active and passive force hampering growth.

Wilhelm (M 221) discussed the possibility of intrauterine epiphyseal damage to the vertebral column caused by anomalies of position and by oligohydramnios in connection with prenatal disorders. He advocated early treatment by means of a posterior shell or gymnastics. In the opinion of Felix (M 446), attempts at removal, alleviation or elimination of scoliosis by rib plastic precedures are abortive, according to postoperative examination, since it is impossible to compensate for the torsion. He predicted improvement from a combination of those interventions with use of spans of the vertebral column by the Lange method. Scheuer reported (M 48) 4 cases of scoliotic paralyses due to a transverse lesion, which he was able to cure respectively by conservative treatment and laminectomy respectively. The paralyses occurred at the time of greatest development. This observation supports Lange's demand for surgical intervention in cases of progressive scoliosis.

According to Weil (G 1129), sciatica in many cases is the result of pressure damage to the nerve cells within the vertebral canal. Medial prolapse of the root produces sciatic scoliosis on the opposite side. In cases of scoliosis with lateral prolapse the vertebral column is averted to the side of the prolapse (representation of distance). For operation on the *prolapsed lumbar disc*, Schroder (A 1785) recommended peridural anesthesia (eleventh and twelfth thoracic for soft tissue and fifth lumbar-first sacral for the nerve roots). The ligamentum flavum should always be fenestrated to provide enough room for the roots. Only loose or disconnected segments of disc tissue should be removed.

According to Penholz (D 120), the results of surgical intervention are the better the more exactly the loose and disconnected tissue is removed. Various methods are employed in the use of contrast media in the vertebral canal to diagnose prolapse of a disc. Stirnweis (C 120) expressed the opinion that scout films suffice for diagnosis and for determining the level of the prolapse. Kloss (B 91) recommended functional myelographic study because it delineates also labile prolapse, he believes as well, in his opinion. Reinhard (O 809) and Koberg (O 236) recommended abrodil for myelographic study. Panter, in collaboration with Reinhardt, wrote a special treatise on the contrast method as applied to the spinal sac and its variants, e.g., discographic and peridurographic study. Decker (F 1691) emphasized the fact that suboccipital gas myelographic study with elevation of the pelvis offers excellent possibilities for diagnosis of tumors of the spine and prolapse of the discs, agreeing with Pia (O 170) as to the simplicity and safety of this method. If there is reason for suspecting a tumor, Reinhardt, too, has expressed preference for gas myelographic study.

Lower Extremities.—Hohmann (G 54) pointed out that many failures in the treatment of the so-called *congenital hip luxation* are due to belated treatment. He insists on early treatment combined with rotation osteotomy later. According to Penners (R 393), this luxation can be diagnosed within the first four weeks, because the Perrin-Ferraton disease appears whenever the hip joint is abducted or bent.

Antetorsion of the femoral neck is rather strongly increased in the presence of hip luxation. For determining the angle, Rippstein (M 345) elaborated a method applied by Dunlard and Tyder, which, with two exceptions (anteroposterior position and the position of hip flexion at an angle of 90 degrees and abduction at 20 degrees on a straddling apparatus), outlines the actual antetorsion and the actual angle of the femoral neck.

In addition to correcting antetorsion, it is advisable to perform a plastic operation on the roof of the acetabulum if sclerosis of the acetabular arcus is present. Interpositions in the joint should be excluded by arthrogram (Worzfeld, R 412). Chiari (M 4) first reported the results of his *transversal pelvic osteotomy for a roof plastic operation on the acetabulum*, a method he first introduced in 1953. By this operation he shortens the weight-bearing arm and lengthens the power-exerting arm, with good protection of the femoral head. The results proved excellent in 9 out of 10 cases.

Epiphysiolysis capitis femoris is to be attributed, according to Neumeyer (A 905), to local malacia. Hormonal disorders, he pointed out, are important in isolated cases only. He emphasized the importance of setting up and fixing the cap by driving a nail through the femoral neck. Haferland (C 257) rejected any forced or open reduction. After nailing he observed no capital disorders, but he did twice observe stiffness of the hip joint.

Surgical intervention in cases of *Perthes' disease*, if confined to driving a nail through the femoral neck according to Pitzen, results in an essential shortening of the treatment period and in improved results (Peter, R 417).

As to *rheumatoid arthritis*, Vainio and Satranen (M 217) observed, 14 times within a year, distention luxations in the hip joints of juvenile patients. There is danger of subsequent deformity of the femoral head in such cases. In order to prevent injuries of this kind, puncture of the joint and intra-articular injection of hydrocortisone are recommended. For remobilizing the hip joint, Sonnenschein suggested resection of the proximal end of the femur. Contraindications are represented only by inflammation, recent foci and acute polyarthritis. Interposition above the stump would improve the results.

Baud (M 24) differentiated a *typical "old-age hip"* from coarthrosis and prearthrosis. The "old age hip" is characterized by decalcification, atrophy of the vertical columns and translucent foci in the lateral area of the neck and in the trochanter. In this way he explained the relative frequency of peritrochanteric fractures of the femoral neck in old persons. Schmitz (M 360), however, was not able to establish the presence of histologic differences in hip arthroses of different origins. Surgical intervention is the capital *treatment* for arthrosis of the hip. For arthrodesis, Rettich (L 218) recommended the Lange method, i.e., nailing, plus fixation of the upper capital pole and the acetabular roof by means of a bone bolt fashioned from the trochanter or a spread double nail according to Witt.

With pseudoarthroses of the femoral neck or traumatic necroses of the femoral head the best results are obtained, if an arthroplastic procedure followed by an endoprosthesis is used, according to Hackenbroch (F 1282). He shuns these measures, however, in cases of arthritis. In this connection, Waterman (A 1767) pointed out the importance of muscular mechanics. It is essential, according to his observations, that the drilled aperture be smaller than the diameter of the bolt. He insisted also, upon the importance of determining the indications strictly. Numerous complications may occur if metal caps are used in a plastic procedure on the hip joint. Galli (M 470) mentioned protrusio acetabuli as among them, expressing preference for the unconditional use of methyl acrylates in performing a joint plastic. Rettig (L 118) and Sperling (A 1385) wrote on the necessity of postoperative treatment.

Diseases of the meniscus and changes therein *play an important part* in injuries of the knee joint. Ekesparre (M 27) interpreted meniscal disc as a disorder of fetal development. According to his own research, it is an unquestionable indication for surgical intervention. Stedtfeld (R 399) observed a genuine and histologically confirmed lipoma of the meniscus. The cause of this change, not hitherto observed, is still hypothetical. The most likely explanation is a connection with the vessels. In order to prevent relapses, total extirpation is necessary. Hartung (R 149) expressed the opinion that meniscus ganglion is caused by fibromatous or myxomatous proliferation of the tissue along the parameniscal marginal arteries. Albert (O 282) pointed out the typical changes visible in roentgen pictures of the meniscus. He demonstrated pressure defects, impressions, and circumscribed punched-out areas at the caput tibiae, which are to be explained by pressure of the ganglion on the bone.

In operation for lesions of the meniscus, Stelli (C 97) advocated resection, in order to prevent arthrosis. Because of evidence of regeneration of the meniscus, Hagemeyer (A 1087) also suggested resection, *provided* the remaining part is intact.

In post-traumatic effusions of the knee joint, Brandes (G 1467) and Heise (G 1185) noticed good results from the use of hydrocortisone (prevention of excessive reactions of mesenchyma; antiphlogistic and antiproliferous effects).

Operation for *injured collateral ligaments* gains more and more in importance. Mayr (P 216) emphasized the good results gained by central displacement of the proximal appendage of the ligament according to Lange-Ruther (E 148) who agree on this point. Lange (P 216) emphasized the fact that plastic repair of collateral ligaments is simpler and more successful. Ehalt and Ohl (R 79) even expressed themselves in favor of early operation, in which the torn ligamental parts have to be fixed with thin wire sutures at the right place.

He opposed utilization of the meniscus as a substitute for the ligamentum cruciatum. He employs a fascial plastic procedure or, in cases of only partial plastic intervention, fixation of the torn ligament within a bone canal by means of silk-bridle sutures. An injured meniscus is not stable enough, a healthy one is too valuable (Mayr, P 216). In reexamining patients operated on according to Lange, Mayr observed good results in 90 per cent of the cases. Rathke (M 29) recommended the Lindemann method, i.e., use of the gracilis or semitendinosus tendon with attachment to the ligamentum patellae. Janik has offered an instructive survey of injuries to the ligamentum cruciatum and their treatment.

In treatment of *crushing fractures of the patella,* extirpation yields better results than does the attempt at restoration (Schönbauer, R 266; Ender, P 207).

Schlüter and Mey (M 42) described a hitherto unobserved location of *aseptic bone necrosis*—the joint surface of the tibial head. In their opinion it was connected with persisting osseous nuclei.

Clubfoot should be treated as early as possible (Hohmann, G 54; Bosch, P 149). According to Bosch, a modification of the Kite method has turned out well. It calls for approaching all components simultaneously, with the exception of the talipes equinus. The talipes equinus should be the last, and, whenever possible, it should be overcorrected. If conservative treatment fails, operation is indicated, which also applies to relapses.

Hauberg (P 156) recommended achillotenotomy together with severing of the posterior capsule and the medial ligament apparatus, and "fanning out" of the tibialis posterior muscle. Transplanting the tibialis anterior to the dorsum of the foot is rarely necessary, according to him.

In the treatment of talipes after the twelfth year of age, suztalar arthrodesis with wedge osteotomy is the preferred method (Hopf, P 162).

For "hollow foot," Löffler (A 778) recommended operation on the soft tissue during childhood; if done later, he suggested tangential chiseling off the high instep. For *ball* hollow foot, there should be additional resection at the bases of the first metatarsals. For *spread hollow* foot a cutis-strap plastic, with ligation of the first and fifth metatarsals, is preferable.

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cent. Different methods of treatment are (1) conservative treatment with withholding of food (Dörfler); (2) conservative treatment with provision of food (Meulengracht), and (3) radical resection (Finsterer).

Schwarz (A 449) reported on late results after *gastric resection,* with anterior and posterior anastomosis. Of the 170 resections, 50 per cent included anterior and 50 per cent posterior gastroenterostomy. The two methods produced identical results.

Ulitsch (A 745) explained his position in cases of total and "enlarged total" gastric extirpation and the duration of survival for patients operated on with this technic. He strongly urged total gastrectomy in all cases of scirrhus, carcinoma fibrosum and linitis plastica, pointing out that the abdominal approach is almost always sufficient. As anastomosis the esophagojejunostomy is adequate. For a high lying carcinoma of the cardia he recommended approach through the two cavities. With regard to the period of survival, the progress is still poor.

Nakayama (C 266) presented an estimate of the different operative technics for total gastrectomy, taking into account his own 260 cases. His conclusions were as follows:

1. The direct esophagoduostomy is practicable only if there is no great occlusion at the point of anastomosis. Sustaining sutures have to be applied between the diaphragm and the head of the pancreas. With this technic the mortality rate amounts to 2.2 per cent.

2. The interposition of different intestinal loops between the esophagus and the duodenal stump is technically difficult and means an additional operative burden for the patient. It is the best method, however, for the physiologic mechanism of digestion, because the transplanted loop takes over the stomach's function and the passage through the duodenum remains open. The mortality rate of this method is zero.

3. In esophagojejunostomy the passage of chyle through the duodenum is eliminated, which is disadvantageous to digestion. With this technic the mortality rate is 2 per cent. Sustaining sutures have always to be applied for the purpose of unburdening the anastomosis. Suturing of the anastomosis must be performed in two layers. Postoperative complaints of difficulty in swallowing are due to scar strictures or relapses. Scar strictures are present with esophagoduodenostomy in 43 per cent of cases; with esophagojejunostomy, in 31.8 per cent and in operations done by joining intestinal loops, only 11.1 per cent.

After presenting indications for total extirpation of the stomach, Nakayama (C 277) described his own method. He resects the pancreas at the crossing point of the medial colic artery, simultaneously cleaning the celiac lymph nodes.

He investigates beforehand the possibility of operation by means of transperitoneal splenovenographic studies. Stenosis and passive congestion of the splenic vein prove the carcinoma inoperable (irruption into the retroperitoneal region). The mortality rate associated with this method is 2.05 per cent.

To avoid rapid evacuation after total gastric resection, Mandl (P 403) performs two Braun's anastomoses, one located behind the other, below the esophagojejunostomy. Rainer and Zollner (D 371) observed 59 cases of anemia after total gastrectomy. They recommended treatment by administration of vitamin B_{12} and iron.

For carcinoma of the fundus with extension in the direction of the cardia and for genuine cardial carcinoma, Holle and Heinrich (C 164) advocated the two-cavity operation according to *Lewis Ivor,* with esophagoantrostomy. They approach by their own method, however, an isolated tumor in the fundal area, i.e. They resect the superior gastric segment and perform a subdiaphragmatic esophagoantrostomosis. The same is true of an ulcer near the cardia. Subdiaphragmatic fundectomy is performed by abdominal removal of the superior gastric segment and the establishment of an end-to-end anastomosis between the intra-abdominal portion of the esophagus and the remainder of the pyloric segment. In order to insure adequacy of the anastomosis, the esophageal rami of the left gastric artery and the left caudal phrenic artery must be preserved at all costs. The blood supply of the esophagus, coming from below, extends as far as 3 cm. above the diaphragm.

with a glance at the pathophysiologic aspects of the subject. According to the world medical literature, the average mortality rate is 8.6 per cent.

Peritonitis as a cause of death has declined sharply. Among 800 operations performed by Block on the extrahepatic bile ducts, the mortality rate for men was 80 per cent and for women 12.1 per cent. Before operation, functional tests of the liver and kidneys must be made, since the hepato-renal syndrome may occur. Block described the clinical picture of that syndrome and of diseases in which hepatic damage is in the front rank: hepatic crisis, hepatic coma, hepatargy and other conditions are included in the hepatorenal syndrome. Disturbances of function of the extrahepatic bile ducts, the so-called dyskinesia: nervi splanchnici increase the tonus and motility of the bile ducts, while the vagus acts in the opposite manner. There is confusion as to whether the sphincter of Oddi in the gallbladder neck (Lütgens) acts synergistically or antagonistically. After cholecystectomy, irritability of the sphincter of Oddi may persist. Block refuses to operate on the vegetative nervous system in case of dyskinesia of the bile ducts, recommending a procaine block from the ninth to tenth thoracic level on the right side.

Contrary to this opinion, Rosenauer (D 864) recommended that in such cases both splanchnic branches be severed below the diaphragm either retroperitoneally or transpleurally, according to Kux. One must be sure, however, that there is only a functional syndrome. Psychogenic disturbances must be excluded.

Hess (D 857) pointed out that postoperative complaints after cholecystectomy are often caused by gastritis, ulcers and colitis.

In the presence of colic and bile stasis, however, there are usually changes in the bile duct system. Their causes may be detected by intraoperative cholangiographic study, which is also recommended by Wulff (D 877).

In patients with such complaints Hess (D 857) observed stones in the bile ducts in 27.5 per cent of the cases; stenosing papillitis in 37.5 per cent; chronic pancreatitis in 10 per cent; stenosis caused by scars in 12.5 per cent, and hepatic stenosis in 50 per cent. Papillitis was present in 59 per cent of all cases of cholelithiasis.

Hilgenfeldt (D 877), pointing out that operative cholangiographic study is not always possible in small hospitals, recommended the insertion of a T drain into the choledochus and a postoperative cholangiographic study of the area above the T drain.

Fischer (D 810) maintained that *stone formation* in the choledochus is possible only in cases of choledochus stenosis. With stones present in the deep bile ducts, icterus is facultative in only 60 to 75 per cent of the cases. A careful anamnesis should be taken, as well as a roentgenogram of the bile ducts with a contrast medium.

A suspected stone in the choledochus is sufficient cause for operation, but the choledochus should be opened only if there is a true indication, and a blocking stone in the cystic duct is no contraindication. According to the literature, stones in the choledochus are overlooked in 20 to 68 per cent of operations on the gallbladder.

Opening of the choledochus is imperative if (1) there are palpable stones in the choledochus; (2) there is a history of icterus or cholangitis; (3) the choledochus is dilated; (4) if small gallstones are present; (5) the ductal system is enlarged and extended and the gallbladder contracted, or (6) puncture of the choledochus reveals opacity or sandlike bile.

Fischer mentioned the value of operative cholangiographic study, which, among other advantages, makes it possible to determine the number of gallstones present. After the stones have been removed from the bile ducts with a stone spoon, palpation by probing and irrigation should be done and a new roentgenogram taken. Stones wedged in the papilla rarely call for the transduodenal splitting thereof.

Fischer (D 810) recommended choledochus drainage by T drain according to Kehr. Loss of fluid bile can be avoided (Mollowitz, D 877) by inserting an additional plastic cannula into the duodenum.

Löffler and Spohn (D 877) also recom-

Kourias and Sapkas (C 272) reported *late results after radical gastric resection for ulcer*, by which they mean resection with removal of the ulcer. Of 1,028 patients operated on, 601 were reexamined. The results were as follows: excellent, 36.7 per cent; very good, 25 per cent; moderate, 8.9 per cent, and bad, 2.4 per cent. These results agree with those obtained by other authors.

Postoperative ulcers occurred after resection in 0.5 per cent of the cases; in resection for elimination in 0.37 per cent. The dumping syndrome is observed more frequently after B 2 than after B 1 operations; in these authors' cases, in 21 per cent. Complaints caused by associated diseases, such as cholecystic and hepatic ailments, were frequently observed.

Berger and Reissiegl (B 27) discussed the value of resection and its justification for the purpose of removing a duodenal ulcer. Over twenty years, 331 resections for elimination, with systematic removal of the pylorus, were performed. The mortality rate was 2.4 per cent. In 1 case there was fatal hemorrhage from the eliminated ulcer, and in another peritonitis resulted from a perforating ulcer. Eighty-eight per cent of the patients operated on were found cured when reexamined.

Schwarz (C 499) reported on the possibility of resecting duodenal ulcers and occlusion of the duodenal stump. To avoid injuring the choledochus, he inserts a drain into this duct as deep as the duodenum. The anterior wall of the duodenum is connected with the superior posterior edge of the ulcer by catgut sutures, which are followed up by a double-layer suture connecting the anterior wall of the duodenum with the pancreatic capsule. Spontaneous expulsion of the drain from the choledochus occurred in all but 1 case.

Laprell (C 404) described his use of a mucous membrane cylinder for closing the duodenum in cases of penetrating ulcer. After the duodenum has been severed close behind the pylorus, it is lifted with a duodenal forceps. With the serosal coat of the posterior duodenal wall left on the pancreatic capsule, the duodenal muscularis has to be sharply freed at the posterior wall to the ulcer site. Further preparation must be done from both edges of the duodenum toward the ulcer. From the resulting serosal defect at the posterior wall of the duodenum it is easy to reach the ulcer. In this way the posterior wall of the duodenum is detached from the ulcer. The posterior duodenal wall is seized with forceps and drawn upward, and any necessary further resection is done, with attention to aberrant pancreatic ducts. Sufficient tissue of the anterior wall must be preserved. Double-layer suturing of the duodenal stump is necessary, and the suture should be covered by the pancreatic capsule, the transverse mesocolon or the lesser omentum. With this method the mortality rate is 3.77 per cent. The suturing is adequate.

Chryssopathis (B 277) proved that *vagus resection* prevents jejunal ulcers for a limited time only. In dogs the flow of gastric juice reaches a considerable level five months after resection of the vagus nerve. The flow, however, is less than it was before the resection.

Liver.—In a few cases of *hepatic icterus*, Lehner (D 294) observed healing after a simple laparotomy. He explained this as the result of a vasomotor shock reaction on the spastic hepatic artery. Periarterial sympathectomy of the hepatic artery was done for the first time in 1947 by Mallet-Guy, with cure in 75 to 80 per cent of the cases.

Bile ducts.—After 270 operations performed on the bile ducts during the past five years, 26.2 per cent of the patients still had slight complaints, and operation was unsuccessful in 3.3 per cent of the cases. Fischer (D 779) recommended cholecystectomy as an early operation for lowering the incidence of complications and reducing the mortality rate. Haenisch (D 294) advocated intra-operative cholangiographic study, with which he is able to detect not only stones but anomalies of the bile ducts. Baurh (D 779) exposed the dangerous potentialities of operations on the liver and bile ducts, emphasizing cardiac, circulatory and renal insufficiencies. There is also the great danger of a breakdown in the water and mineral equilibrium. An increase in the nonprotein nitrogen level is an important sign of the latter.

Block (D 795) described *failures* of, and complaints after, operations for gallstones, with a glance at the pathophysiologic aspects of the subject. According to the world medical literature, the average mortality rate is 8.6 per cent.

Peritonitis as a cause of death has declined sharply. Among 800 operations performed by Block on the extrahepatic bile ducts, the mortality rate for men was 80 per cent and for women 12.1 per cent. Before operation, functional tests of the liver and kidneys must be made, since the hepato-renal syndrome may occur. Block described the clinical picture of that syndrome and of diseases in which hepatic damage is in the front rank: hepatic crisis, hepatic coma, hepatargy and other conditions are included in the hepatorenal syndrome. Disturbances of function of the extrahepatic bile ducts, the so-called dyskinesia: nervi splanchnici increase the tonus and motility of the bile ducts, while the vagus acts in the opposite manner. There is confusion as to whether the sphincter of Oddi in the gallbladder neck (Lütgens) acts synergistically or antagonistically. After cholecystectomy, irritability of the sphincter of Oddi may persist. Block refuses to operate on the vegetative nervous system in case of dyskinesia of the bile ducts, recommending a procaine block from the ninth to tenth thoracic level on the right side.

Contrary to this opinion, Rosenauer (D 864) recommended that in such cases both splanchnic branches be severed below the diaphragm either retroperitoneally or transpleurally, according to Kux. One must be sure, however, that there is only a functional syndrome. Psychogenic disturbances must be excluded.

Hess (D 857) pointed out that postoperative complaints after cholecystectomy are often caused by gastritis, ulcers and colitis.

In the presence of colic and bile stasis, however, there are usually changes in the bile duct system. Their causes may be detected by intraoperative cholangiographic study, which is also recommended by Wulff (D 877).

In patients with such complaints Hess (D 857) observed stones in the bile ducts in 27.5 per cent of the cases; stenosing papillitis in 37.5 per cent; chronic pancreatitis in 10 per cent; stenosis caused by scars in 12.5 per cent, and hepatic stenosis in 50 per cent. Papillitis was present in 59 per cent of all cases of cholelithiasis.

Hilgenfeldt (D 877), pointing out that operative cholangiographic study is not always possible in small hospitals, recommended the insertion of a T drain into the choledochus and a postoperative cholangiographic study of the area above the T drain.

Fischer (D 810) maintained that *stone formation* in the choledochus is possible only in cases of choledochus stenosis. With stones present in the deep bile ducts, icterus is facultative in only 60 to 75 per cent of the cases. A careful anamnesis should be taken, as well as a roentgenogram of the bile ducts with a contrast medium.

A suspected stone in the choledochus is sufficient cause for operation, but the choledochus should be opened only if there is a true indication, and a blocking stone in the cystic duct is no contraindication. According to the literature, stones in the choledochus are overlooked in 20 to 68 per cent of operations on the gallbladder.

Opening of the choledochus is imperative if (1) there are palpable stones in the choledochus; (2) there is a history of icterus or cholangitis; (3) the choledochus is dilated; (4) if small gallstones are present; (5) the ductal system is enlarged and extended and the gallbladder contracted, or (6) puncture of the choledochus reveals opacity or sand-like bile.

Fischer mentioned the value of operative cholangiographic study, which, among other advantages, makes it possible to determine the number of gallstones present. After the stones have been removed from the bile ducts with a stone spoon, palpation by probing and irrigation should be done and a new roentgenogram taken. Stones wedged in the papilla rarely call for the transduodenal splitting thereof.

Fischer (D 810) recommended choledochus drainage by T drain according to Kehr. Loss of fluid bile can be avoided (Mollowitz, D 877) by inserting an additional plastic cannula into the duodenum.

Löffler and Spohn (D 877)

mended the T drain after the choledochus is opened.

While Fischer rejected primary suturing of the choledochus as well as dilation of the papilla, which may result in secondary papillary shrinking, Zenker (D 877) maintained that the T drain with a patent papilla is unnecessary or injurious. Kunz (D 877) took the same view, stating that the T drain should be employed only for cholangitis or pancreatitis.

Reichle (D 839) and Florcken (D 877) advocated *anastomosis between the choledochus and the gallbladder and duodenum respectively.* Indications are not confined to tumors of the pancreatic head or to extensive stenosis of the choledochus. The mortality rate is 6 to 8 per cent.

Pancreas.—The problems of surgical treatment of the pancreas were pointed out by Vosschulte (D 544). The treatment of acute pancreatitis is always conservative. In cases of chronic pancreatitis the bile ducts have to be watched. This author mentioned the radiomanometer research done by Caroli, Mallet-Guy, Hess and others.

In cases of chronic pancreatitis, choledochoenterostomy can be successful only if the choledochus and the pancreatic duct have a common orifice. Transduodenal sphincterotomy has been recommended, according to Doubilet and Mulholland. The results have been encouraging.

For pancreatic cysts Vosschulte (D 544) recommended cystenterostomy. A connection with the stomach means the danger of a hemorrhage and of digestive erosion of the cyst. On the other hand, Weber (B 215) advocated pancreatocystogastrostomy.

The pancreatic carcinoma originates, in 60 per cent of the cases, in the head of the gland. The duodenopancreatectomy with pancreatojejunostomy or pancreaticoductostomy for carcinoma still carries a mortality rate of 25 per cent. Survival for five years is still rare.

Adenomas of the pancreas must be removed by extirpation. The mortality rate is 12 per cent.

Small Intestine.—On the strength of experimental research in animals, Kiss and Horvardt (A 197) emphasized the importance of neurogenic factors in the causation of ileus. According to Török (A 1279), the side-to-side anastomosis results in the best blood supply. In the ring of this anastomosis new thin capillaries are formed while in the end-to-end anastomosis there remains an area poor in vessels and 1 cm. wide.

Large Intestine.—Rehbein and Wernicke (B 18) reported on Hirschsprung's disease. On the strength of the research done by Svenson, they resect the ganglion-free segment.

Urologic Surgery

H. G. Stoll, M.D., A.I.C.S.

On the question of urolith formation, Koch (D 951) contributed further interesting research. He traced urolith formation back to the elimination of pathologic colloid substances growing from a flowing together and accumulation of crystalloids until they become first spheroliths, then microliths.

The primary cause of that disturbance is to be seen in a disturbance of the blood supply of the kidneys. From a clinical standpoint these phenomena have been observed by Boshamer (D 964; T 193) and by Hillenbrand and Roesner (T 609). Boshamer demonstrated, as precipitating factors in the colloid secretion, vertebral fractures, amputation of a thigh, and osteochondrosis of the spine. In his opinion, they have to do with a vegetatively induced disturbance of blood flow through the kidney.

Hillenbrand and Roesner examined the urine of 697 patients for colloid corpuscles, spheroliths and microliths. They obtained positive results in 58 patients with kidney stones, other diseases of the urogenital system, or diseases of brain or bone. Thirteen cases could not be classified.

Hyaluronidase applied to rats did not influence these excretions of colloid substances (Brinkmann, T 337).

Chwalla (T 202) evaluated the autopsy reports on 494 cases of *"essential" hypertension.* In one-third there was macroscopic hyperplasia of the adrenal gland. In another third, an abundance of lipoids was observed in the adrenal cortex.

For clinical investigation of pathologic changes in the adrenal gland, Chwalla recommends examination for hypercorticoiduria and retropneumoperitoneum. In 3.3 per cent of the cases there were renal cysts, in 0.67 per cent, adrenal adenomas, and in 1.7 per cent, hypernephroid tumors. In 25 per cent of the male patients with "essential" hypertension there was an adenoma of the neck of the bladder, in 2 per cent, diffuse prostate hyperplasia, and in 1.4 per cent, primary rigidity of the sphincter.

In addition, there were cases of mural stenosing walls and changes in the lumen of the main renal artery, resulting in choking hypertension.

Fikeis (T 38), writing of the unilateral cystic kidney, and Rodeck (T 751) discussing ureteritis cystica, described *hypertonia* caused by unilateral renal disease.

Behind a disease resembling nephritis, with a myelotic blood picture and an increased nitrogen level, there may be hidden a primary latent renal damage with myelotic reaction, or leukemia with secondary renal damage, or leukemia without renal damage but with increased cellular disintegration (Otto, T 775).

The *Rehn acid-base test* of topical renal function may be simplified, according to Peters (C 157), by using *planoparallel* colored glasses to determine the ph. Schmiedt and Löw (T 673) stated their faith (next to the usual functional tests) in the clearance test, especially for prostatic and hypertonic conditions. In such cases, they stated, the half-time value method of Dost is sufficient if shortened to half an hour and if an indwelling catheter is not used.

Schimatzek (T 737) mentions that in *retrograde pyelographic* study the lower calyx groups and the neck of the ureter are much more distinctly delineated by putting the patient in the abdominal rather than in the dorsal position. This could be extremely important in many cases. Sinner (T 564) emphasized the value of retropneumoperitoneum for diagnosing morphologic changes in the kidneys and the perirenal area, pointing out the relatively small risk involved.

According to Alken and his co-workers (T 438), the paperelectrophoresis is convenient for objective estimation of the activity of urogenital tuberculosis, and also for demarcation of the exudative from the productive stage. They consider this method indispensable for evaluating reactions and indications for surgical intervention.

Fischer (T 743) and Reuter (T 442) reported on the cystometric and sphincterometric examination of prostatic patients. Bauer and Schmidt (T 643) reported on the same method in cases of multiple sclerosis. Niesert (T 103), Brandstetter and Gibsch (X 1272), as well as Scholz (X 466) discussed the diagnostic and therapeutic value of sphincterometry in cases of relative incontinence of urine.

Weber (T 231 resp. 424) observed that in his urologic practice, when instruments were used, the percentage of enterococci was relatively high and that with antibiotics there occurred an increase in proteus pseudomonas as well as, especially, staphylococci. He advocated, therefore, treatment by broadspectrum antibiotics only in special cases. According to Weber, the urethra is normally inhabited by strains of staphylococcus albus that create an antibacterial hindrance and, thus, a protection from ascending infection. With antibiotic treatment the protective flora is replaced by a *pathogen-resistant flora.*

Eufinger (T 401) reported on the influence of shock and collapse on the *tonus of the urinary tract.* In the acute stage there is *detrusor hypotony,* causing spontaneous elimination of urine. In protracted cases, and postoperatively there is *hypertonia.* Diminished detrusor pressure is connected with increased pressure of the opening, while increased detrusor pressure is accompanied by diminished opening pressure of the vesical outlet. In Eufinger's opinion this functional change is due to a disturbance of vegetative innervation.

According to Gelbke (T 65), a *reflective inhibition of diuresis* of the contralateral kidney in nephrectomy is due to flat anesthesia and the formation of a hematoma in the area of the plexus close to the kidney.

Uretrocavernosographic and cavernosographic studies are recently invented roentgen methods (May and Hirtl, N 120). With injection of ioduron, 20 to 30 per cent, into the glans, the cavities of the glans and the corpus cavernosum of the urethra are delineated. The corpora cavernosa and the efferent veins are delineated on the anterior shaft of the penis after injection.

Injuries, inflammation, priapism and tumors are said to produce typical roentgen results.

For strictures of the urethra, May (D 893) inserts long probes with urethroscopic controls. Above these probes he introduces straight bougies, by means of which he breaks open the stricture. In his report on urethral surgery, he recommended for *hypospadias* the method introduced by Browne. For the operative treatment of *stricture* he advocated the Johanson method.

Marberger (D 916) also gave credit to the Johanson method, on the strength of his own experience with 65 patients who had strictures, diverticula and tumors of the urethra. According to Marberger, however, there is one danger, namely, the possible infection of the wound after the second stage. Gelbke (T 65) and Oberniedermayr (D 936) also emphasized the progress represented by the Denis Browne and Johanson methods for hypospadias and stricture respectively.

Übermuth (D 930) advocated the Brown method for coaptation of the edges of the skin: the use of Michel clips with "ground-off teeth" as employed in the operation for urethral fistula according to Heller. The frequent fistulas resulting from the use of wire sutures are thus prevented.

Döderlein (D 936) employed successfully the following method for closing large *bladder defects* in 5 patients: a piece taken from the posterior wall of the vagina was rolled into, and sutured into, the vesical defect.

On the subject of *transurethral resection,* Mauermeier (W 293) insisted on the superiority of the tube current for cutting. The spark gap current, however, is better for coagulation.

Niessert (T 103) recommended subtotal resection of the bladder in cases of *atonia.* In his experience, the resection was followed by a considerable diminishing of residual urine.

Hartmann (D 943) reported on injuries to the *bladder* and *urethra* caused by pelvic fractures, and on their treatment. In 879 cases a pelvic fracture was complicated by injuries of the bladder and the urethra. Of the patients, 9.3 per cent died of shock within the first twelve hours.

Knipper (T 831) recommended an ileum or a Boari plastic to correct *ureteral injuries* or *ureteral stenosis.*

For the bilateral supply, Hasche-Klünder (C 148) maintained that implantation of both ureters into a shut-out ileum loop, which is anastomized with the bladder, according to Couvelaire, is the best method.

Hennig (T 1) reported on *injuries of the vena cava in nephrectomy.* They rarely give rise to air embolism, but meticulous angiographic study is necessary. A *duodenal fistula* following nephrectomy can be cured by careful treatment of the electrolytic and protein loss, if jejunostomy is done (Schmiedt, X 15).*

Esophageal Surgery

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In 1955 there appeared a book by *Winkelbauer,* published by De Gruyter, entitled *Surgery of the Esophagus.* It presents an excellent and comprehensive survey of that domain; also, it takes into consideration the whole German and non-German literature on the subject up to 1954.

Karcher (D 408) presented a report on his experience in dealing with carcinoma both of the esophagus and of the cardia. Sixty-eight of his 75 patients had cardial carcinoma. In 7 a carcinoma developed at the lower terminal segment of the esophagus. Forty-five patients were operated on by the abdominal thoracic approach, 23 by the abdominal route and only 7 by the transthoracic approach.

The postoperative mortality rate was 32 per cent, i.e., half that mentioned by other authors (12 to 72 per cent). Postoperative survival for 51 patients was as follows: 18 died within the first year, 7 in the second year and 2 in the third year. In the author's opinion resection is superior to roentgen radium therapy. But only resection of the tumor offers a certain chance for curing.

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*At the Sixteenth Meeting at Hamburg of the German Urological Society, the following subjects were discussed:

- Etiology and Clinical Aspects of Sex Hormones (Tonutti and Alken)
- Fertility of the Male; Questions of Artificial Insemination (Kinning)
- Acute and Chronic Nephritis (Randerath, Litzner)
- Conservative Surgery of the Bladder and the Pelvic Ureter (May, Couvelaire)

The reports on the discussion have not yet been published; they will be dealt with later.

With 97 esophageal operations from 1947 to 1954, Decker, Hahn, and Saegesser (U 1, 17) encountered a mortality rate of 40 per cent. They consider the operation advisable solely for cardia carcinoma, but prefer roentgen therapy in cases of genuine esophageal carcinoma. They calculated a survival of only two and two thirds months for their patients from 1939 to 1949, if they had been treated merely with gastrostomy and irradiation.

Wurnig (D 504) examined his material on 198 carcinomas, both of the esophagus and of the cardia, for mention of previous diseases that may have produced carcinoma. Among these he listed traction diverticula, lye stenosis, esophagitis with cardiospasm and the "short esophagus displacement" of the cardia into the thorax. Hiatus hernia was not included. In his opinion the origin of a cardial carcinoma as a result of a hiatus hernia is unlikely.

According to Krauss and Betke (F 465 and F 491), there is only one esophageal malformation among 1,000 to 2,000 deliveries. The most frequent is atresia, with a blind stump and a fistula stretching from the lower segment to the trachea at the level of bifurcation (carcinoma in 90 per cent of all cases). Of 12 patients operated on for esophageal deformities, only 4 could be saved. Wachsmuth (Z 209) demonstrated by color film at a meeting of German surgeons in 1955 his technic for the surgical treatment of atresia of the esophagus.

Denecke (Z 209) reported on the treatment of esophageal stenosis in an infant, 10 months old. The condition had developed after surgical removal of a congenitally atresia esophagus.

The use of bougies for such stenosis is rendered more difficult by prestenotic diverticula, and there is danger of perforation. Denecke, therefore, recommended continuous treatment with bougies, the bougie being left in the esophagus for some time. In this way the scar tissue becomes softened and is able to tolerate further dilation without trouble. This treatment should be applied only clinically.

For more exact treatment of organic or functional strictures of the esophagus, Donner and Teschendorf (Y 202) recommended the use of gelatine capsules filled with barium pap. They are of different sizes for better testing the capacity of the stenotic organ. Capsules that come to a dead stop dissolve, and in this way the passage becomes free again very soon. The authors considered the procedure highly valuable because the capsules measure esophageal lumen correctly and, in this way, clearly point to the correct treatment.

Vogel and Jacobsen (Z 214) reported their experiences in dividing the diverticulum threshold according to Mosher. Of 34 patients, each with an esophageal diverticulum, four-fifths showed improvement when reexamined. In one-fifth there was no change. No dangerous accidents, either operative or postoperative, have been observed. According to the authors, the success of endoscopic splitting of the diverticulum almost equals that of extirpation.

Nissen (H 941) called attention to the fact that complaints of dysphagia do not necessarily bear a direct proportion to the size of the diverticulum. If one examines the anamnesis in a case of small diverticula, one notes that dysphagia antedates considerably the proof supplied by roentgen and endoscopic studies. Consequently, Nissen assumed that abnormal contraction reactions of the muscles have a part in the development of the ailment and that it is even likely that they are responsible for its developing.

Ott reported the bridging of an esophageal stricture by utilizing a pulsating diverticulum of the esophagus.

Peter (A 245) reported an unusually large leiomyoma of the esophagus, thus adding another to the 46 cases known to have been reported in the world literature. The tumor measured 10 by 5 by 5 cm.

Schütz (A 1877) observed a case of dysontogenetic cyst of the esophagus, located in the lower segment. It was possible to extirpate the cyst from the muscularis without opening the mucosa. Such cysts are among the rarest esophageal tumors; only 9 cases have been reported.

roentgen treatment altogether. He expressed the opinion that endobronchial excision or bronchotomy is justified only for small tumors and on healthy parenchyma. He too advocated resection, because it is radical and not likely to produce relapses.

Löhr and Soder (D 10) stated the reasons for their opinion that one should not speak of pneumonia following *blunt thorax trauma* but should call it the "contusion syndrome." The treatment of that syndrome, then, is prophylactic with regard to pneumonia.

Permanent damage is observed in thoracic deformaties and also in severe thickening of the pleura. The authors' opinion is that (not counting contusions) rupture of the small or smallest bronchi next to a pulmonary fissure is most likely to cause tangible changes.

Krauss-Freiburg (D 524) reported on *divulsion of a main bronchus* in a seventeen-year-old boy and its treatment. Suturing of the bronchus to the trachea was done ninety-eight days after the accident. After an eventless postoperative period, good ventilation of the pulmonary field and the flow of blood through the pulmonary vessels was proved. Nevertheless, there was no evidence of oxygen absorption by that lung. The authors, therefore, arrived at the conclusion that surgical intervention must be undertaken as early as possible, i.e., before the alveolar epithelium loses its function.

Hasche (U 343) insisted upon the necessity of active surgical intervention in the presence of *any massive bleeding from the lungs*, stating that death ensues not from the hemorrhage but from suffocation. The development has justified his hypothesis.

Tuberculosis of the lungs nowadays offers the widest scope for surgical intervention, the application of which as a complementary measure has increased accordingly. Massen and Oligschläger (U 304) advocated resection of tuberculoma, on the basis of their experiences with patients treated by conservative methods. Only one-third of 127 patients with tuberculoma could be stabilized. Two-thirds remained clinically active; in 45 per cent, cavities formed.

Resection has increasingly replaced all irreversible collapse therapy. Reitter (D 273) demanded a more fundamental indication for collapse therapy, for the following reasons: in the collapsed lung there occur basic morphologic changes and pathologic processes in the bronchial tree, the blood vessels and the lymph ducts, and also in the pulmonary parenchym and pleura.

Not only the diseased tissue but the healthy pulmonary parenchyma is functionally destroyed. If resection becomes necessary, therefore, it must be extended to cover far larger segments. In addition, the consequent mortality rate is higher (see also Zenker).

Schmidt (U 296) went even farther: for the aforementioned reasons, he considers resection the method of choice for tuberculosis of the lungs, admitting the uses of collapse therapy only when resection is impracticable.

For tuberculoma, Klinner (D 537) advocated the lobe or segment resection, rejecting excision and enucleation. Under "tuberculoma" he included all caseous foci delineated by specific granulation tissue. In 36 out of 40 cases he obtained a cure.

On the basis of their own experiences, Zenker, Heberer and Scholze (U 194) confined the indications to fibrous-caseous apical foci and tuberculoma without involvement of the lobar bronchus. They recognized a relative indication in cases of isolated cavities without disseminated foci and of localization of *rest* or relapse cavities not adaptable to collapse therapy.

They perform segmental resection also for rest cavities after a thoracoplastic procedure, after local treatment of bilateral processes and after pyothorax with circumscribed foci. The last-mentioned indication for segmental resection has not been accepted by other authors. Many of them, including the abstractor of this paper, are in favor of lobectomy.

The fact that the patient is a child is not, according to Müller (V 721), an absolute contraindication to resection, though he prefers collapse therapy for tuberculous children, especially if there are solid round foci, and reserves resection for unmanageable cavities, severe primary phthisis, and extended bronchiectasia. (Contrary to this opinion, the abstractor insists that the indications for a child do not differ from those for an adult.

He has obtained good results in 50 cases.) Wolfarth (U 254) treats fistulas following cavity perforation by suction.

Schiessle and Monod (U 512) defined their positions with regard to operative technic. They described their technic for removal of peripherally located, specified as well as unspecified, foci, echinococcus cysts, infected cysts and abscesses, small pulmonary sequestrums and tumors, carcinoma with metastases and isolated cavities. This technic consists in partial resection or enucleation.

For ulcerating processes within range of tubercular destruction they combine this method with lobectomy.

In order to prevent *insufficiency of the bronchus stump*, Herzer and Stürtzbecher (U 156) developed a specific technic that preserved the peribronchial tissue. On the strength of their own histologic examinations at the site of resection in 60 cases, they held that insufficiency is independent of the specific disease of the bronchi and develops at the site of resection. In their opinion, it is caused by a disturbance in the blood supply of the stump after skeletonization. By their method they were able to reduce the incidence of fistulas from 20 to 4 per cent.

Kassay, Szokodi and Milch (U 250) stated that there is a therapeutic chance, in cases of empyema and bronchial fistula, for endoscopic fulguration of the fistula by treatment with trichlor-acetic, if conservative treatment of empyema is used simultaneously (10 cases).

In order to prevent stronger thickening of pleura after pulmonary resection, Merkel (V 398) recommended suction drainage for seven days and simultaneous pneumoperitoneum.

Rink (V 398) dealt with the problem of residual cavities. In a dry cavity after pneumectomy he prevents the switching of mediastinum into the operated side by applying air inflation. He eliminates the infected *residue* cavity by the "Jalousie" plastic procedure of Heller. After partial resection he inserts a permanent sucking drain into the cervical pleura, provided there is a preoperative pneumoperitoneum.

Among his own cases the author of this paper noticed, after experimental blocking of the pulmonary artery, an increase in pressure for about thirty minutes only. On the other hand, Zittel (U 167) described the occurrence of both refractory tachycardia and dyspnea after pressure increase in the *venous circulation* after pneumectomy. The receptors are located in the right side of the heart, and the reflex corresponds approximately to the Bainbridge reflex. Tauber, Keyssler and Parhofer (D 162) also described an increase of pressure in the pulmonary and systemic circulation, with the heart intact, attributing to hypoxymia the increase of pressure in the systemic circulation after pulmonary resection, the pressure increase in the pulmonary circulation being due to a reduced transverse section of the circulatory pathway. Because of these pressure increases, in their opinion, a damaged heart may easily fail. As a remedy they recommended massive oxygen treatment.

Report on results.—The most extensive such report, or in 1,000 pulmonary resections and tubercular destruction, was published by Nuboer (D 516).

In 29 cases, bilateral resection was carried out, without mortality. Before tuberculous statistics became available, 4 to 12 patients died. During the subsequent era the early mortality rate was 1.6 per cent and the late mortality rate about 1.8 per cent. Stump insufficiencies were noticed in 27 instances. Dissemination or reactivation of old foci occurred in 26. Sputum was normal in 97 per cent of the reexamined patients.

Nuboer rated the incidence of dysfunction after lobectomy, with an uneventful course and without phrenic damage, as high as 12 per cent.

Another report was made by Kugel and Veitl (V 63), on 100 resections for tubercular lung destruction. They operated on 50 collapse-resisting cavities, 18 tuberculomas, 15 cavities with disseminated foci, 3 bilateral cavities, 3 destroyed lungs, and 2 postresection complications. Pneumectomy was performed in 13 cases and segmental resection in 8. In the remaining cases lobectomy, with or without segmental resection, was performed. Satisfactory results were obtained in 80 cases. Three patients died. In 9, the sputum remained "positive."

Zenker (D 509) performed 17 resections for bilateral processes after irreversible collapse measures. On patient died; postoperative complications occurred in 3 cases. Zenker emphasized the fact that this relatively unfavorable result was conditioned by the preceding collapse therapy. For this reason he insisted on more careful and detailed reflection with regard to resection before surgical collapse therapy is undertaken.

Brunner (U 177) reported on his surgical treatment of *bronchiectases* (111 resections with 3 deaths). He observed no bronchial insufficiency, but there were several cases of alveolar insufficiency after segmental resection. Reexamination showed that it is not the hyperextension of healthy lung parts, but *the remaining presence of diseased parts, that* causes postoperative ectasia. Postoperative sputum containing pus is, according to him, a hint that bronchiectasia is still present and calls for further resection. According to Brunner, adolescence is the most favorable time for resection. For bilateral disease he first resects the more severely diseased side.

Strahlberger and Wenzel (U 160) reported the results obtained in 34 patients operated on for bronchiectasia. The operations were done four to eight years ago. The result was determined by the possibility of complete recovery from the initial disease.

Patients with diffuse bronchiectasia permitting only incomplete resection showed only transitory improvement. The functional late result was dependent upon the loss of parenchyma. After lobectomy there was no fundamental change in ventilation capacity. On the other hand, after more extensive resection there were signs of functional hyperextension of the rest parenchyma.

In patients below the age of 50 the condition of the remaining parenchyma was satisfactory. In older patients there was an increased tendency to emphysema.

Reitter (D 520) reported on the surgical problem of the so-called "chronic pneumonia." He applied that expression to the terminal stage of unresolved pneumonia, calling the changes that accompany other pulmonary diseases "secondary pneumonia" and noting, as causes, stenosis and ectasia of the bronchial tree, pulmonary cirrhosis or fibrosis following roentgen treatment, the inhalation of *certain gases and changes occurring after* severe trauma. To these he added genuine pulmonary gangrene. He operated on 60 of 74 patients, with a mortality rate of 13 per cent. The cause of death in almost every case was failure of circulation.

Difficulties present themselves in diagnosis as well as in technic and postoperative treatment. The last-mentioned is made difficult by the fact that patients with chronic pneumonia have usually been treated with antibiotics for a long time, which has made the organisms resistant.

Geissendorfer (D 496) reported his experience in the treatment of 500 patients suffering with carcinoma of the lung. The anamnesis ranged between five and ten months. Of a total of 37.8 per cent of operable tumors, only 8 per cent could be treated by palliative operations. Among 48 carcinomas of the middle lobe, only 2 were operable. The rate of early mortality after pneumectomy was 22.6 per cent. Eleven per cent of the resections resulted in cure for five years. (The decisive point is to reach the two-year line.) Operative results with undifferentiated carcinoma were discouraging. Postoperative roentgen treatment in the cases observed failed to confirm the choice of treatment in 63 per cent.

Salzer (D 501) *reported on 911 bronchial* carcinomas. In 375 cases only an exploratory thoracotomy could be performed. Salzer rejects palliative operations. Twenty-three per cent of the reexamined patients remained cured for four years. The prognosis was surprisingly poor in cases of peripheral carcinoma among his patients.

Becker and Knote (U 67) reported on the fate of inoperable bronchial carcinomas, which depends fundamentally upon the type of the tumor. Of a total of 84 patients who underwent thoracotomy, 23 died. The average survival time was six months. Thoracotomy did not produce accelerated growth of the tumor. The average survival for clinically inoperable patients was about six months. Eleven patients refused operation. They lived another six and a half months. Of 147 patients treated exclusively symptomatically, a transitory improvement was observed in 11. There was no healing in any of these cases.

According to Lohr, Gnuchtel and Wanz (D 303) the *mobility of the diaphragm* is not affected roentgenographically by thoracotomy, by segmental resection or by lobectomy (56 persons examined). Only with unilateral bilobectomy does the result become unfavorable. In the presence of empyema, complete cessation of diaphragmatic mobility was frequently observed. After transthoracic resection of the cardia and operation for hiatus hernia, a decrease in mobility was obvious.

It was observed that, after pneumectomy, early stiffening of the residual cavity is a positive measure for the prevention of diaphragmatic mobility on the healthy side. Gnuchtel, Lohr and Ulmer (D 241), on the strength of their bronchospirometric examinations, arrived at the conclusion that a plastic procedure does not improve pulmonary function after resection of a lung. Segmental resection and lobectomy without plastic operation, and with an uneventful course, does not cause more loss in respiratory *minute volume,* in proportion to its initial level, than does thoracotomy. Only severe thickening of the pleura is able to produce functionally poor values, and can result in a condition requiring pneumectomy.

Finally, the research done by Szokodi and Husveti (U 333) presented interesting features of the respiratory function in asthmatic patients. Even in the stage free of attacks there was a latent bronchospasm, which was alleviated by thoracotomy with interruption of the autonomous nerve tract.

No asthmatoid symptoms appeared after the operation, provided histamine had been administered, while epinephrine improved the respiratory function even before its former level.

The elimination of pathologic reflexes and the increased sensitiveness to epinephrine on the operatively treated side must be regarded as the causes of that phenomenon.

Accidental and Traumatic Surgery

Prof. Kingreen, M.D., F.I.C.S., Lüdenscheid

Sulfonamides and antibiotics, locally applied, have not improved the results of Friedrich wound excision. If an accurate wound excision cannot be performed, however, sulfonamides and antibiotics with a broad spectrum, given orally or parenterally, frequently do prevent local or general infection (Fuss, D 23; Titz, E 546 and E 186, and Starke, D 46). The treatment of *burns* has a specific place. There is general agreement about the local measures to be taken in cases of first and second degree burns (dry dressing or open air treatment). Animal experiments have not shown any toxic damage to the liver resulting from frequent applications of tannin. Immediate excision of the necrotic burned skin, followed by skin transplantation in cases of third degree burns, is applied more and more. In the therapy of shock resulting from burns, infusion of fresh blood or plasma is required for the first days. *"Potenzierung"* treatment and hypothermia also seem to offer hope of success. During convalescence loss of protein must be made up for and anemia prevented (Bohler, C 76 and 28; Frank, A 1833; Hegemann, A 679 and D 80; Koslowski, D 113; Sarre, A 680; Stucke, A 680 and D 108, and Weber, A 681).

Severe shock after other injuries runs its course in different stages. Pain reflexes lead to a serious disturbance of the vegetative equilibrium. Counter-regulation of the body (hyperergic reaction) may threaten the life of the patient. In such cases heat must not be applied; treatment by phenothiacines and ice, rather, is called for. Severely injured persons can be saved by cooling down to 29 C. (Reissig, B 119, and Heme, B 228 and A 1612). In addition, blood transfusions should be given. Fresh blood is preferred to preserved blood because it combats successfully the menace of anoxemia of the internal organs.

Heim (D 31) suggested making the infusion intra-arterially, because oxygenated blood fills up directly the aorta and the coronaries.

In the prophylaxis of tetanus simultaneous inoculation has not stood the test, since it restricts the protection afforded by passive immunization (Richter, A 289).

Also, there are more and more demands for active immunization of the population, especially for endangered agricultural workers, wood cutters and sportsmen, but also for pregnant women, in order to shield the newborn from tetanus infection of the umbilical cord. In the treatment of severe tetanus infections the supercooling method has proved successful. Muscle relaxants, especially MV 301, seem to act better than curare (Beyer, G 298; Bronisch, E 333; Kohlfahl, C 343; Möllerfeld, A 1636, and Tzamalukas, A 293).

Among the different *narcotics*, phenothiacines and muscle relaxants have gained in importance, particularly for the alignment of fractures. Killian (A 1156) advocated locastin, which does not affect the circulation (Wagner, A 970). At present, opinion as to the different narcotica is widely divergent, and no definite verdict is possible as yet (Lorenz and Kloes, E 1).

Primary damage to the brain, accompanied by *commotio cerebri*, if caused by injuries, can hardly be influenced. There should be no bed rest routine. The fasting blood sugar value should be determined. High doses of pyramidon are contraindicated, because they cause irritation of the vegetative nervous system. No lumbar puncture should be used. For severe headache, blocking of the stellate ganglion should occasionally be done. Severe cerebral trauma accompanied by shock calls for blood transfusions and oxygen and megaphen treatment. Small doses of pendiomide reduce *edema of the brain.*

Acute subdural hematoma caused by tearing of the pontal veins is usually associated with severe trauma of the brain stem. Increasing unconsciousness calls for a trial trephining. This method, however, must not be used in cases of extension spasm, pulmonary edema or falling off of the blood pressure. Tracheotomy and suction and drainage of the mucous secretions are indicated in cases of obstruction of the respiratory tract.

In cases of *open brain trauma*, the particles of brain debris must be removed from the brain cavity without damaging the adjacent tissue. For this purpose, manual compression of both jugular veins (Queckenstedt test) is recommended. Suction drainage of the brain cavity may be omitted, provided there is no foreign body in the brain tissue.

In the treatment of *epilepsy* following cerebral trauma, excision of scars as far as the ventricles is not sufficient, because the spasm-causing parts of the brain are located in the adjacent ganglion cells. Corticographic study of the open brain cortex will determine the location of the spasm segments. Then the segments of damaged brain may be removed. Reexamination by electroencephalogram is mandatory in all cases of severe brain trauma (Jansen, E 224; Lembcke, A 599; Merram, A 1690; Ohnesorge, C 380; Stender, A 443, and Weber, A 681).

Blunt injuries of the cardiac area.—Commotio cordis has no anatomically tangible effects, yet it may aggravate existing damage in the vessels. All pathologically pertinent changes are summarized under the heading, *contusio cordis.* They lead mostly to severe pericardial, epicardial or myocardial damage, which calls for treatment by an internist. Only rupture of the pericardium now and then requires surgical intervention. Cardiac trauma in connection with the surface of the body must be operated on as quickly as possible, provided the condition of the patient still permits it. Suture of a piece of skin may be tried when a coronary artery is injured. It is astonishing to see how injury by impalement of the heart, when operated on, heals completely without secondary damage (Derra, D 313 and A 711; Grosse-Brockhoff, D 300; Krönke, C 81; Kuntz, C 472; Meesen, D 288; Niedner, F 177, and Spiegelhoff and Watrin, E 193).

In cases of *trauma of the chest*, rupture of a bronchus is often overlooked because the patient is in severe shock. Pulmonary emphysema ensues, as do atelectasis and pneumothorax. Bronchoscopic and bronchographic study may provide information as to the type of injury. Krauss (A 714 and D 524) succeeded in suturing a ruptured bronchus ninety-eight days after the injury.

Greater injuries of the liver.—The mortality rate of such injuries, without timely surgical intervention, runs up to 100 per cent. Tamponage with a gelatin sponge overlaid with a gauze tampon is necessary to prevent a fatal hemorrhage after removal of the gauze tampon. After the operation, therapy is necessary for protection of the liver (Scholz, A 1633).

Trauma of the small intestines.—This occurs frequently in accidents of sport: bicycling, gymnastics, boxing or football. Such an injury calls for particular watchfulness, because of the frequently ensuing intestinal stenosis.

Trauma of the small intestines may occur: (1) by invagination of the intestinal wall as a consequence of a circumscribed loss of the rigidity of the wall, with destruction of the muscular layer (invagination stenosis); (2) by damage to the submucosa; (3) by damage to the mesentery and vessels, or (4) by traumatic invagination. Further consequences may be diverticula or adhesions (Krätzig, A 433, and Ney, B 432 and C 334).

Very serious are *injuries of the pelvis* caused by impalement. When these occur, involvement of the abdominal cavity may be difficult to diagnose. A quick decision for laparotomy is important (Hartmann, D 943, and Ladewig, A 106).

For *blunt injuries of the kidney* one is nowadays reluctant to perform an operation except when there is reason to suspect a simultaneous trauma of organs of the abdominal cavity (Maintz, A 883).

Contusion or rupture of the urethra is usually discovered only several days after the accident, owing to the appearance of a urine phlegmon. In that event, removal of the afflicted kidney can hardly be avoided (Hasche-Klünder, A 148 and May, D 904).

Injuries of flexor tendons of the finger call for subtle sutures, which must not be too tight. Further relief will be obtained by fixation of the proximal tendon parts. Immobilization of the finger for more than three weeks is required (Beteh, C 460 and Vonhout, Stafiniak and Finip, C 225).

Lacerations of the achilles tendon are almost always total, even though the clinical symptoms seem to say otherwise. Operation, therefore, is always necessary (Hagemeyer, A 1087, and Schönbauer, D 207). As a *compensation for torn ligaments of the knee,* use of the cutis strip according to Rehn has shown valuable successes (Schmidt, A 411, and Konig, B 453). Konig (B 463) recommended a crucial ligament plastic of the knee joint without arthrotomy. A reamer with a long handle and a trochar are propelled through the joint from the lateral aspect of the femur to the anterior aspect of the tibial condyle, the iliotibial tract (Maissiat strip) being used as a substitute for the cruciate ligament. There is argument as to whether the torn meniscus should be removed totally or subtotally, but there is agreement that in cases of degenerative change extirpation of the entire meniscus is necessary (Hagemeyer, A 1087; Janik, A 856 and B 196; Rüther, E 148 and Strell, C 95). Küntscher (D 211, D 285, C 481, A 337, A 708 and E 12) demanded *mechanizing of the treatment of fractures.* The main aim is to fix the fracture in an ideal position by means of a powerful nail, filling out the whole bone marrow cavity. This can be achieved by widening the marrow canal at its physiologically narrowest place with the aid of a long drill 2 to 12 mm. in diameter. In cases of femoral fracture close to the knee joint, Küntscher recommended a nail 65 cm. long, driven from the trochanter through the knee joint into the tibia. (There will be no ankylosis of the joint.) Even in cases of pseudarthroses of the long bones percutaneous drilling of the marrow canal and the driving in of a marrow nail may serve as a complete substitute for the Phemister method. (In the process of drilling many small spans are produced; the periosteal cylinder is to be spared.) According to Küntscher, the effect of the Phemister span depends upon involvement of the periosteal cylinder and its surrounding connective tissue in a bland inflammation. The *Rush nail* (dynamic osteosynthesis) has found many adherents in Germany. This method, particularly for fractures close to the joint, has the same advantages as other osteosyntheses have.

Infections of the bone marrow caused by nailing call merely for a splitting of the soft parts; no removal of the nail is required. It is not advisable to use wire as fixing material in fractures of the long bones, because of the danger of corrosion. Bone spans have not as good an effect as have autoplastic spans, particularly with the Phemister method. However, Bohler (C 76) achieved good results from transplanted bank spans, in fractures of the forearm, with simultaneous marrow nail-

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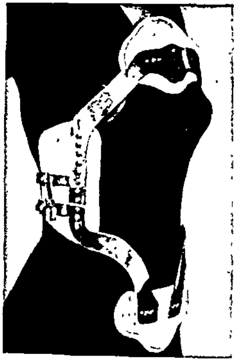

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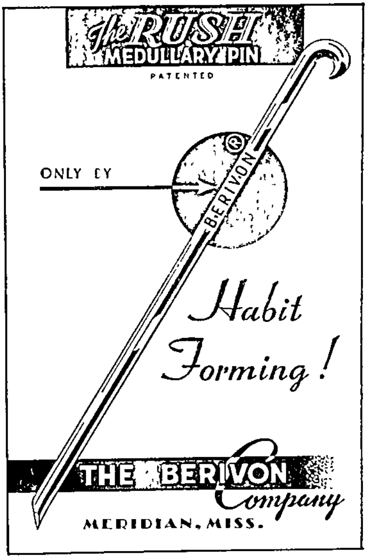
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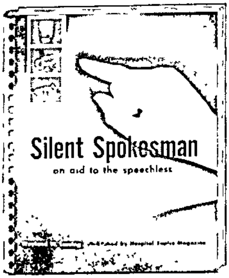

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